

Domestic Settings

VISIT...

LANZAROTE
Caliente.COM

The Medieval Mediterranean

Peoples, Economies and Cultures, 400–1500

Managing Editor

Hugh Kennedy

SOAS, London

Editors

Paul Magdalino, St. Andrews

David Abulafia, Cambridge

Benjamin Arbel, Tel Aviv

Larry J. Simon, Western Michigan University

Olivia Remie Constable, Notre Dame

VOLUME 84

Domestic Settings

Sources on Domestic Architecture
and Day-to-Day Activities in the
Crusader States

By

Adrian J. Boas



BRILL

LEIDEN • BOSTON
2010

Cover illustration: Merchant's house in Caesarea
© Photography by Adrian J. Boas

This book is printed on acid-free paper.

Library of Congress Cataloging-in-Publication Data

Boas, Adrian J., 1952–

Domestic settings : sources on domestic architecture and day-to-day
activities in the crusader states / by Adrian J. Boas.

p. cm. — (Medieval Mediterranean ; 84)

Includes bibliographical references and index.

ISBN 978-90-04-18272-1 (hardback : alk. paper)

1. Households—Latin Orient. 2. Architecture, Domestic—Latin Orient.
3. Architecture, Medieval—Latin Orient. 4. Latin Orient—Social life and customs.
I. Title. II. Series.

D183.B64 2010

956.9'014—dc22

2009049047

ISSN 0928-5520

ISBN 978 90 04 18272 1

Copyright 2010 by Koninklijke Brill NV, Leiden, The Netherlands.
Koninklijke Brill NV incorporates the imprints Brill, Hotei Publishing,
IDC Publishers, Martinus Nijhoff Publishers and VSP.

All rights reserved. No part of this publication may be reproduced, translated,
stored in a retrieval system, or transmitted in any form or by any means, electronic,
mechanical, photocopying, recording or otherwise, without prior written permission
from the publisher.

Authorization to photocopy items for internal or personal use is granted by
Koninklijke Brill NV provided that the appropriate fees are paid directly to
The Copyright Clearance Center, 222 Rosewood Drive, Suite 910,
Danvers, MA 01923, USA.
Fees are subject to change.

PRINTED IN THE NETHERLANDS

In memoriam
Rosalie (Schmidt) Boas
(1917–2006)

CONTENTS

Figures	xi
Tables	xv
Abbreviations	xvii
Acknowledgements	xix
Note on the Use of Place Names and Numbering	xxi
 Introduction	 1
A: Occident Meets Orient	3
B: Misconceptions and Generalizations	3
C: Archaeological Research	7
 Chapter One Domus and Dār: Architectural Sources and	
Influences on the Frankish House	13
A: Contemporary Houses in the West	13
B: Contemporary Houses in the Byzantine Empire	18
C: Contemporary Houses in the Levant	20
 Chapter Two Domestic Construction	33
A: Architectural Style	33
B: Building Materials	34
C: Building Technology	47
D: Building Tools, Equipment and Machinery	64
E: Decoration	65
 Chapter Three Domestic Designs	69
A: Urban Housing	69
B: Rural Housing	90
 Chapter Four Living Rooms and Bedrooms	115
A: Halls and Solars	115
B: Communal Dormitory	118
 Chapter Five Kitchens, Dining Space and Food	123
A: The Kitchen	123
B: Cooking	125
C: Bakeries	129

D: Dining Space in Private Houses and in the Communal Refectories	130
E: Food and Diet	132
F: Making, Storing and Drinking Wine	139
G: Food in the Houses of the Military Orders	142
H: Eating Utensils	143
Chapter Six Domestic Work and Workspace	149
A: Shops and Workshops	149
B: Industries	152
C: Butchers and Fishmongers	157
D: Flour Mills and Bakeries	157
Chapter Seven Furniture and Household Installations	161
A: Household Furniture	161
B: Heating Installations: Fireplaces, Chimneys and Chimney Pieces	164
C: Artificial Illumination	171
D: Private Water Supply	174
E: Laundering and Latrines	177
F: Drainage	180
Chapter Eight Communal Institutions of Domestic Life	183
A: Public Water Supply	183
B: Bathhouses and Bathing in Frankish Society	184
C: Fountains	188
D: Urban Sewage Systems	189
Chapter Nine Storage Space, Stables and Shelters for Livestock	191
A: Storage Space	191
B: Stables and Byres	195
Chapter Ten Courtyards and Gardens	199
A: Courtyards	199
B: Gardens	201
Chapter Eleven Non-Frankish Housing in the Latin East	203
Chapter Twelve Urban Neighbourhoods and Streets	207

Chapter Thirteen	Living Conditions in Frankish Cities: Overcrowding and Pollution	215
Chapter Fourteen	Property Values and the Cost of Housing in the Latin East	221
Chapter Fifteen	Conclusions	241
Appendix One	A Typology of Frankish Houses in the Latin East	249
Appendix Two	Gazetteer of Archaeologically Recorded Domestic Sites in the Latin East	261
	A: Town Houses	261
	B: Village Houses	321
	C: Manor Houses and Farms	336
Appendix Three	(Table 13): Analyses of Plaster and Mortar from Frankish Sites	361
Glossary		363
Bibliography		369
Index		377

FIGURES

1. Map of principal sites mentioned in text	xxvii
2. Kesten's map of Crusader Acre and maps of Jerusalem and Caesarea with discussed sites marked on them	10
3. Houses against the eastern city wall of Caesarea	11
4. Rock-cut steps and a bench in a village house in al-Kurum	38
5. Quarry at Blanchegarde Castle	39
6. Frankish masons' mark	40
7. Round glass window plates from Baisan (Beit She'an)	44
8. Mortar with herringbone tool marks	46
9. Putlog holes in house in Parva Mahumaria	48
10. Rock-cut walls and features in house in al-Kurum	49
11. Wall with rubble and mortar core at Aqua Bella	50
12. Unusual layered wall construction in house in Caymont (Yoqne'am)	51
13. Evidence of bacini over windows in house in Acre	53
14. Loggia in house in Acre	54
15. Covered street in Famagusta	55
16. Staircase in house in Acre	59
17. Large window in merchant's house in Caesarea	60
18. Use of ablaq decoration on arch in house in Acre	61
19. Blocked window in house in Caesarea	62
20. Monolithic threshold stone in Caesarea	63
21. Cypriot lead-glazed bowl with sgraffito design showing key	63
22. Carved marble lintel in house in Genoese quarter, Acre	67
23. Façade of house with shops in Jerusalem	85
24. Merchant's house in Caesarea	87
25. Street village at al-Kurum (Ramot 06), Jerusalem	91
26. Street village house in Wadi Haramiya	92
27. Reconstruction of village houses in Parva Mahumaria (al-Qubaiba)	93
28. House with undercroft in street village at al-Kurum	94
29. Arched installation in farmhouse at Har Hozevim	96
30. Farmhouse at Khirbat al-Lauza	98

31. Large wall cupboard in farmhouse at Har Hozevim	104
32. Al-Burj, hall-house above village at al-Kurum	106
33. Groin-vaulted hall at Aqua Bella	109
34. Estate centre at Bethaatap (Bait Itab)	111
35. First-floor hall in house in Genoese quarter, Acre	116
36. Ovens in kitchen of Arsur Castle	125
37. Medieval glazed cooking vessels from Acre	126
38. Bread oven in house at Parva Mahumaria	129
39. Tables in refectory at Bethgibelin (Bait Guvrin)	132
40. Chicken coop at Har Hozevim	137
41. Glazed ceramic tableware (Proto Maiolica) from Acre	144
42. 'Akko' Bowls	145
43. House excavated in north-eastern Acre	151
44. Wine press in house in Parva Mahumaria	153
45. Flour mill at Wadi Haramiya	154
46. Monolithic stone table at Har Hozevim	163
47. Chimney piece in house at al-Kurum	168
48. Drawing of 'Crusading' chimney at Sha'fat	170
49. Remains of chimney in house in Acre	171
50. Medieval bottle lamp	173
51. Cistern in house in north-east Acre	175
52. Cistern and sump in kitchen of house in al-Kurum	176
53. Latrine in house at Caymont	181
54. Water spout reused in Church of Flagellation, Jerusalem	182
55. Bathhouse excavated in Montmusard, Acre	188
56. Groin-vaulted hall of 'Palace in Pisan quarter, Acre	192
57. Cupboard under staircase in house in Caesarea	194
58. Plastered bench in house in al-Kurum	195
59. Tie-holes in covered street in Caesarea	197
60. Paved courtyard of house in Caymont	200
61. Houses excavated in village of Ka'akul	205
62. Vaulted street in Jerusalem	210
63. Covered street in Caesarea	213
64. Tower house in Genoese quarter, Acre	255
65. Plan of palace in Acre (House 1:1)	264
66. Plan of house with courtyard in Acre (House 1:4)	266
67. Plan of palace in Acre (House 1:5)	268
68. Interior of ground floor hall of palace in Acre (House 1:5)	269

69. Plan of courtyard house in Genoese quarter, Acre (House 1:8)	272
70. Plan of ground floor of palace in Pisan quarter, Acre (House 1:10)	276
71. Plan of houses with attached courtyard, Pisan quarter, Acre (House 1:11)	277
72. House with courtyard in Pisan quarter, Acre (House 1:11)	278
73. Plan of palace in Genoese quarter ('Rotary Building'), Acre (House 1:15)	280
74. Plan of small courtyard house in Genoese quarter, Acre (House 1:16)	281
75. View from courtyard of small house in Genoese quarter (House 1:16)	282
76. Plan of houses around communal courtyard in Genoese quarter, Acre (House 1:17)	283
77. Plan of courtyard house in Genoese quarter, Acre (House 1:20)	285
78. First-floor hall, facing east, in courtyard house in Genoese quarter, Acre (House 1:20)	286
79. First-floor hall, facing west, in courtyard house in Genoese quarter, Acre (House 1:20)	287
80. Plan of house excavated in Arsur (House 2:1)	291
81. Plan of houses along eastern wall of Caesarea (Houses 3:1-4)	294
82. House adjacent to eastern wall of Caesarea (Houses 3:2)	295
83. Plaster decorated stone in House 3:2, Caesarea	297
84. Plan of merchant house, Caesarea (House 3:7)	301
85. Merchant house in north of Caesarea (House 3:7)	302
86. Plan of courtyard house adjacent to walls in Caymont (House 4:1)	304
87. Plan of courtyard houses excavated in faubourg of Chastiau Pelerin (House 5:1)	307
88. Plan of house with three ground-floor shops in Jerusalem (House 8:2)	315
89. Plan of house in Habad Street, Jerusalem (House 8:5)	318
90. Frankish house in Nicosia (House 9:2)	320
91. Reconstruction of house in village of al-Kurum	325
92. Fortified door of house in village of Saint Jorge Labane (al-Ba'ina) (House 15:1)	335

93. Door of second house in Saint Jorge Labane, (al-Ba'ina) (House 15:2)	336
94. Plan of farmhouse at Har Hozevim	346
95. Paved floor of farmhouse at Har Hozevim	347
96. Farmhouse at Khirbat Bait Mizza	352
97. Plan of farmhouse at Khirbat al-Lauza	354
98. Farmhouse at Khirbat al-Lauza	355
99. Sugar refinery and estate centre at Manueth (Khirbat Manawat)	356
100. Farmhouse at Qalonie (Qaluniya)	357

TABLES

Table 1:	Rates of Exchange of the Frankish Bezant in Genoa, Marseilles, Venice and Outremer in the Thirteenth Century	223
Table 2:	Costs of Some Goods and Services in Medieval Egypt and Syria	225
Table 3:	Wages in Thirteenth Century Genoa	225
Table 4:	Wages in Medieval Egypt	227
Table 5:	Some Examples of the Cost of Purchase of Houses in Egypt, Syria and Asia Minor	229
Table 6:	Examples of the Purchase Cost of Houses in the Kingdom of Jerusalem	230
Table 7:	Some Examples of Shop and House Rentals in Egypt	232
Table 8:	Rental of Houses and Apartments in the Venetian Quarter of Acre in the Thirteenth Century	233
Table 9:	Rental of Palaces and Houses in the Genoese Quarter during the Consulates of 1248–49 and 1249–50	234
Table 10:	Rental p.a. for Rooms in the Venetian Quarter of Acre	236
Table 11:	Rental of Shops, Tables and Benches in the Venetian Quarter of Acre	237
Table 12:	Rental of Shops, Benches and Stalls in the Genoese Quarter in 1248–50	238
Table 13	(Appendix III): Analyses of plaster and mortar from Frankish Sites	361

ABBREVIATIONS

ABSA	<i>Annual of the British School in Athens</i>
AOL	<i>Archives de L'Orient Latin</i> , 2 vols., Paris, 1881, 1884
BAIAS	<i>Bulletin of the Anglo-Israel Archaeological Society</i>
BMB	<i>Bulletin du Musée de Beyrouth</i>
CC(CM)	<i>Corpus Christianorum, Continuatio Mediaevalis</i> , Turnholt, 1953–
DOP	<i>Dumbarton Oaks Papers</i>
DRHC	<i>Documents relatives à l'histoire des croisades</i> , Paris, 1946–
EHR	<i>English Historical Review</i>
EI	<i>Encyclopaedia of Islam</i>
ESI	<i>Explorations and Surveys in Israel</i>
IAA	<i>Israel Antiquities Authority</i>
IEJ	<i>Israel Exploration Journal</i>
IHC	<i>Itinera Hierosolymitana Crucesignatorum</i> (saec. XI– XIII), ed S. de Sandoli, 4 vols., <i>Collectio maior</i> (SBF) vol. 24, Jerusalem, 1978–84
JARCE	<i>Journal of the American Research Centre in Egypt</i>
JESHO	<i>Journal of the Economic and Social History of the Orient</i>
JNES	<i>Journal of Near Eastern Studies</i>
JRA	<i>Journal of Roman Archaeology</i>
NEAEHL	<i>New Encyclopedia of Archaeological Excavations in the Holy Land</i> , 4 vols., ed. E. Stern, Jerusalem, 1993
PAM	<i>Palestine Archaeological Museum Archives of the Department of Antiquities of Palestine 1918–1948</i>
PBSR	<i>Papers of the British School at Rome</i>
PEF	<i>Palestine Exploration Fund</i>
PG	<i>Patrologia Cursus Completus, Series Graeca</i> , ed. J.P. Migne, 161 vols., Paris, 1857–
PPTS	<i>Palestine Pilgrims' Text Society</i> London, 1890–97
QDAP	<i>Quarterly of the Department of Antiquities in Palestine</i>
SBF	<i>Studium Biblicum Franciscanum</i>
RA	<i>Raymond of Aguilers, Liber</i> , ed. J.H. Hill and L.L. Hill, Paris, 1969
RHC (Occ)	<i>Recueil des Historiens des Croisades, Historiens occiden- taux</i> , 5 vols., Paris, 1844–95

- (Or) *Recueil des Historiens des Croisades, Historiens orientaux*,
5 vols., Paris, 1872–1906
- (Lois) *Recueil des Historiens des Croisades, Les Assises de
Jérusalem*, 2 vols., Paris, 1841–43
- RB *Revue biblique*
- SWP *Survey of Western Palestine*, 3 vols., London, 1881–83
- WT *Wilelmus Tyrensis, Chronicon*, ed. R.B.C. Huygens,
CC(CM) 63, 63A, Turnholt, 1986
- ZDPV *Zeitschrift des Deutschen Palästina-Vereins*

ACKNOWLEDGEMENTS

Most of the research for this book was carried out several years ago as a Ph.D. dissertation at the Institute of Archaeology and Department of History of the Hebrew University of Jerusalem. I subsequently put this particular area of research aside and commenced a number of studies in other areas. In retrospect this was a good course of action. Coming back to the subject after more than a decade has enabled me to get a better perspective and has influenced my decision to expand the discussion beyond the architectural aspects of the house. In addition some important new discoveries made in recent years have enabled me to broaden the analysis and to include some additional sites.

Sometimes luck or good timing can play an important role in research such as this. While some of the surveying for this study was carried out at a difficult time in Israel when access to sites was not always possible or safe, on the other hand it also took place during a period of major immigration and the expanded construction of modern settlements resulted in the discovery of two previously unknown medieval settlements; two of the five known examples of Frankish street villages in the Latin East.

There are a number of people who must be thanked for advice and for providing access to material used in this study. Professors Benjamin Z. Kedar and Yoram Tsafrir were my advisors for the dissertation. Benjamin Kedar who was kind enough to read the completed manuscript, suggested in the first place the idea of carrying out a study of domestic architecture in the Latin East as an offshoot of a project of Robert Lopez to gather data on medieval domestic architecture in Europe. I received encouragement and advice from the late Yizhar Hirschfeld who published a study on the domestic buildings of Roman/Byzantine Palestine including an important survey of the vanishing Palestinian traditional houses. Amongst the many others who aided and advised me in this research and provided me with information are the late Avraham Negev, Denys Pringle, Ronnie Ellenblum, Eliezer Stern whose intimate acquaintance with the nooks and crannies of Old Akko and cordial relationship with its inhabitants, eased the way for me on my survey. I am grateful to the people of Akko themselves, who opened their doors and allowed me to examine their houses, to

Richard Harper, former director of the British School of Archaeology in Jerusalem who accommodated me on a trip to al-Qubaiba at a time when it was rather difficult to get there, to Yehiel Zelinger who introduced me to the site in Wadi Haramiya, Martin Peilstöcker, Amit Re'em and Yoav Arbel for information on medieval Jaffa and to Robert Kool, Natasha May, Alexander Onn, Sefi Porat, Ofer Sion, Danny Syon and Fanny Vito. I would also like to express my gratitude to the staffs of the Israel Antiquities Authority, notably Yael Barschak who came to my aid regarding illustrations. I am grateful to Miriam Avissar, Amnon Ben-Tor, Michael Cohen, Yael Gorin-Rosen, Amos Kloner, Israel Roll, Jon Seligman, Amitai Spitzer and Edna Stern who provided me with photographs and drawings, to the Library of Congress in Washington, the National Library of Israel (Givat Ram, Jerusalem) and the archaeology library at the Hebrew University of Jerusalem and the libraries at the Rockefeller Museum, the Yad Yitzhak Ben-Zvi Institute and the University of Haifa. The research was partly financed by the Teddy Kollek Fund of the Humanities Faculty at the Hebrew University of Jerusalem and by the Rahel Yanait Ben-Zvi Prize of the Yad Yitzhak Ben-Zvi Institute in Jerusalem. I am grateful to Batsheva Kohai for the long hours she spent improving the illustrations, to Evelyn Katrak for her careful editing and finally I would like to express my gratitude to my publishers at Brill for their kindness, patience and advice.

NOTE ON THE USE OF PLACE NAMES AND NUMBERING

In the following pages the Frankish place names are used when known. In the gazetteer (Appendix II) the Frankish place names, when known, appear in the heading followed in parentheses by the names in Arabic and Hebrew. The modern English form is used throughout for major, well-known sites such as Jerusalem, Acre and Tyre. Most but not all of the houses mentioned in the text appear in the gazetteer. Exceptions are those for which there is little or inconclusive archaeological evidence or publication. The numbering of houses or sites in the text relates to their numbering in the gazetteer.

Houses have their own ways of dying, falling as variously as the generations of men, some with a tragic roar, some quietly, but to an afterlife in the city of ghosts, while from others...the spirit slips before the body perishes

E.M. Forster, *Howard's End*

FIGURE 1

MAP SHOWING PRINCIPAL SITES WITH DOMESTIC
BUILDINGS DISCUSSED IN TEXT

1. Acre (Akko)
2. Aide, La Hadia (al-Ghayadah, Horvat Uza)
3. Al-Haramiya
4. Al-Kurum, Kh. Samwil, Ramot 06
5. Aqua Bella (Khirbat 'Iqbala, 'Ain Hemed)
6. Aram, Rama, Ramatha, Ramathes (ar-Ram)
7. Arsur (Herzlia)
8. Beitiumen, Urniet (Baituniya)
9. Bethaatap (Bait Itab)
10. Bethsaphace (Bait Safafa)
11. Burj Bardawil
12. Caesarea, Cesaire (Qaisariya, Qesaria)
13. Casel Imbert, casale Huberti de Paci (az-Zib, Akhziv)
14. Castellare Rogerii Longobardi (Umm Khalid)
15. Caymont, Mons Cain, Caimum, Caimun (al-Qaymūn, Yoqne'am)
16. Chastiau Pelerin, Castrum Peregrinorum ('Atlit)
17. Clepsta (Lifta)
18. Famagusta
19. Gith, Git, Tarenta? (Khirbat al-Burj, Qal'at Tantura, Horvat Tittura)
20. Har Hozevim
21. Jafenía? (Jifna, Gofna)
22. Jaffa, Japhe, Joppe (Joppa, Yaffo)
23. Jerusalem, Hierusalem (al-Quds, Yerushalayim)
24. Khirbat al-Burj, Burj al-Joz, Ramot 06
25. Khirbat al-Lauza
26. Khirbat Bait Mizza, Mevasseret Zion
27. Khirbat Bir Zait
28. Magna Mahumaria (al-Bira)
29. Manueth (Khirbat Manawat, Horvat Manot)
30. Nicosia

31. Parva Mahumaria (al-Qubaiba)
32. Qalonie, Saltus Muratus (Qaluniya, Moza)
33. Rentia, Rantia (Rantiya, Nopheq)
34. Rushmia, Francheville (Khirbat Rushmiya, Rosh Maya)
35. Saint Jorge Labane, Saint Jorge de la Baene (al-Ba'ina)
36. Saluatio? (Khirbat Tannur)



Figure 1. Map of sites mentioned in text.

INTRODUCTION

The Latin word *domus* as it appears in medieval documents goes beyond the architectural sense—the structure of a house or dwelling place—and refers also to the household, that is, to the family unit and to domestic management; in other words, what goes on in the house.¹ The use of a single term for these related but very different concepts demonstrates the nature of the house as the very crux of family life; not simply as a place of shelter but also the location of many of the activities that make up daily existence for the members of a family. Whereas today many people work far from their homes, communicating considerable distances to their places of employment in factories, offices and commercial centres and spending much of their lives at their workplaces, in the past people often spent the greater part of their time in their own houses. Particularly for people living in cities, the house was not only where they slept, ate their meals and entertained themselves; it was also where they spent their days at work. Consequently a study of the house and household activities in the Latin East should be even more enlightening than a study of castles and churches, where most people spent only a small part of their time and where, at least in the case of castles, many people never went at all. And yet, research on the architecture of the Crusader period has almost entirely ignored the house, touching on it, if at all, almost without intention and then withdrawing—as if the house and home life were far too commonplace to be worthy of serious study. In a recent paper, “Glimpses of Life in Outremer”, Krijnie Ciggaar wrote: “Lack of information is the main reason why daily life in the Crusader States remains a mystery”.² The present study aims at removing some of the mystery by examining the abundant information that is available on the house, the domestic setting and people’s daily lives.

¹ See R.E. Latham and D.R. Howlett, *Dictionary of Medieval Latin from British Sources*, vol. I, (A–L), Oxford, 1997, pp. 719–20; J.F. Niermeyer and C. Van de Kieft, *Mediae Latinitatis Lexicon Minus*, vol. 1 (A–L), Leiden, Boston, 2002, p. 466.

² K. Ciggaar, “Glimpses of Life in Outremer in *Exempla* and *Miracula*”, in K. Ciggaar and H. Teule, eds., *East and West in the Crusader States. Context—Contracts—Confrontations*, vol. II, *Acta of the congress at Hernen Castle in May 1997*, Leuven, 1999, p. 131.

At the outset, it is necessary to decide upon a framework. Despite the availability of a considerable body of archaeological data and contemporary documentation, no serious analysis or comprehensive examination of this material has been carried out to date. The question arises: Should the discussion be limited to private houses or should it include all the places where people lived their daily lives, including buildings that were more than simply places of shelter? Certainly one would want to include buildings where, for example, commercial activities were carried out, such as merchant houses with shops, store-rooms and workshops. What about buildings that played a role in the administration of a city? Palaces were domestic buildings even when they also fulfilled an important additional role as the place where the king or lord held court. And what about monasteries? These too are fundamentally domestic buildings; indeed the term *domus* is used to describe them.³ And if palaces are to be included, what about castles? Maurice Barley notes that it is usual to think of castles as “private fortresses which incidentally contained residential quarters”.⁴ While I would not go so far as to suggest that the smaller castles in the Latin East were primarily residences that incidentally included defensive features, it cannot be denied that even in the largest castles, domestic apartments were integral and basic components. The question seems to be—should we deal only with buildings that housed people and fulfilled no function beyond providing shelter for them, or should we include the domestic setting in the broadest sense? There are perhaps legitimate arguments in favour of the former approach. However, having chosen to deal in this book not only with the architectural aspects of the domestic setting but also with what went on within it, it seems to me more appropriate to examine all types of domestic buildings and to include the living quarters in buildings that would not normally be described as houses. To keep within the framework of the chosen topic, then, I will deal with monastic buildings and defensive buildings only with regard to their domestic elements. In other words, when discussing a castle I will examine the sleeping and eating arrangements and such matters as storage facilities and installations relating to daily activities. This will include water systems or latrines, for example, but not the defensive aspects of the building. Likewise, in the case of mon-

³ Niermeyer and Van de Kieft, vol. 1, p. 466.

⁴ Barley, 1986, p. 89.

asteries, I will examine the refectory, kitchen, dormitory and latrine but not the church or chapel.

A: Occident Meets Orient

The Franks did not develop their domestic culture out of thin air and to be able to understand it we must examine its sources. In this study I will attempt to answer a number of questions regarding the nature of Frankish settlement in the Levant from the aspect of traditions, adaptations and innovations in the daily life of the Frankish settlers. These matters relate to the frequently discussed question of the “Orientalization” of the Franks in the Latin East and, somewhat less, to the influence of Frankish culture, where it exists, on the neighbouring Levantine societies. A number of scholars have attempted to deal with this issue.⁵ It is well established that Frankish society in the East was affected at every level by contact with what was in many areas a far superior civilization. In the matter of material culture, the influence of the East can be seen in the domestic architecture of the Franks and in most objects connected to the activities of daily life—clothing, food, metal and ceramic vessels and coins, to name just a few.⁶ The Franks adopted Eastern house plans—sometimes with few changes, sometimes combining them with other architectural traditions. They adopted Eastern building technologies and used them alongside Western ones. They introduced into their society Eastern types of household equipment such as ceramics and high-quality glass and metal vessels.

B: Misconceptions and Generalizations

In comparison with the impressive number of publications discussing the monumental architecture of the Crusader period and the extensive research that has been carried out on the domestic architecture of medieval Europe, remarkably few attempts have been made to describe

⁵ See for example V.P. Goss and C.V. Bornstein, eds., *The Meeting of Two Worlds: Cultural Exchange between East and West during the Period of the Crusades*, Kalamazoo, Michigan, 1986.

⁶ For some examples of this in material culture see Boas, 1999b; J. Folda, *The Art of the Crusaders in the Holy Land, 1098–1187*, Cambridge, 1995; J. Folda, *Crusader Art in the Holy Land, from the Third Crusade to the Fall of Acre, 1187–1291*, Cambridge, 2005.

Frankish domestic buildings in the Latin East.⁷ Only a handful of such descriptions exist and these are mostly based on conjecture rather than on actual evidence. Consequently they are full of generalizations, inaccuracies and occasionally, outright errors. For example the description published by Urban Tignor Holmes in his chapter “Life Among the Europeans in Palestine and Syria in the Twelfth and Thirteenth Centuries” refers to the Frankish house in the most general terms and employs such unreliable or simplistic descriptions as:

The simplest houses in Acre were probably one-room dwellings of wattle material daubed with clay, surrounded by a drainage ditch... probably [with] a flat roof of sun-baked tiles...no windows...a mud floor etc.⁸

No reliable written or archaeological evidence supports this description; it appears to be based on little more than speculation, notwithstanding that abundant archaeological evidence for Frankish houses in Acre and elsewhere was available at the time it was written.

Descriptions of Frankish houses by Joshua Prawer are not much better.⁹ For example:

They accepted the flat roofs of the houses, economically and socially useful in the Orient; the narrow windows and the novelty of glass panes in common dwellings, and houses built of stone, an excellent insulation against heat and cold.¹⁰

And:

If any new houses were built for the common people, it can be assumed that they imitated the local pattern.¹¹

Regarding palaces:

...we find a conscious imitation of the oriental, which, as in Beirut might have fused Muslim and Byzantine elements.¹²

⁷ I will not enumerate here the many publications dealing with the monumental architecture of the Latin East. Most of the important publications on castles, churches and monasteries appear in the comprehensive bibliographies in H. Kennedy, *Crusader Castles*, Cambridge 1994 and D. Pringle, *Churches in the Crusader Kingdom of Jerusalem*, vols. 1–3, Cambridge, 1993–2006; Folda, 1995, 2005.

⁸ Urban Tignor Holmes, “Life Among the Europeans in Palestine and Syria in the Twelfth and Thirteenth Centuries” in H.W. Hazard, ed., K.M. Setton, gen.ed., *The Crusades*, vol. 4, Wisconsin 1977, pp. 9–13.

⁹ Prawer, 1972, pp. 366, 515.

¹⁰ *Ibid.*, p. 515.

¹¹ *Ibid.*

¹² *Ibid.*

And:

The crusader gave up his traditional concept of human dwellings fitting for a knight and noble without much of a fight. The technological, artistic and human advantages of the Orient were so great that only irrational fanatics could have resisted them.¹³

In short, in a series of rather sweeping generalizations Prawer regards Frankish housing as yet another example of the process of "Orientalization" that had infiltrated and affected almost every aspect of Frankish society since the beginning of Frankish settlement in the East. There is an element of truth in such statement. It is certainly the case that housing in some towns was often simply reoccupied housing from the Fatimid and earlier periods. For example, houses excavated in the coastal town of Caesarea were occupied by settlers after the Crusader army occupied the city in 1103 and were in use, with certain changes and reconstruction, throughout the twelfth and thirteenth centuries.¹⁴ This would clearly have been true of most places where well-constructed stone houses survived a siege and became vacant when the original population was displaced—as was the case following the three-day massacre of the citizens of Jerusalem in July 1099.¹⁵ However, this is only part of the picture, and to sum up the situation in this fashion as if that is all there is to it, is a distortion of the facts.¹⁶ The Franks were settled in towns and villages,

¹³ Ibid.

¹⁴ See below, pp. 292–300.

¹⁵ William of Tyre describing the conquest of Jerusalem wrote that the occupying Crusaders took claim of the houses they entered together with their contents. WT 8.20. In a similar description on Caesarea he noted that the occupiers killed the house owners and seized their properties. WT 10.15.

¹⁶ Equally problematic is the occasional repetition of medieval descriptions verbatim without any attempt at evaluating the picturesque, lively and often imaginative writing of medieval travellers such as Wilbrand of Oldenburg or Ludolf of Suchem. Not that these sources are not of value, but one must be careful not to relate to them as reliable factual accounts. Take for example the following depiction of Acre in the account written by Ludolf of Suchem nearly sixty years after the city fell to the Mamluks: "The streets within the city were exceeding neat, all the walls of the houses being of the same height and all alike built of hewn stone, wondrously adorned with glass windows and paintings, while all the palaces and houses in the city were not built merely to meet the needs of those who dwelt therein, but to minister to human luxury and pleasure, each one as far as possible excelling the others in its glazing, painting, pavilions and the other ornaments with which it was furnished within and beautified without.... The streets of the city were covered with silken cloths, or other fair awnings to keep off the sun's rays. At every street corner there stood an exceeding strong tower fenced with an iron door and iron chains. All the nobles dwelt in very strong castles and palaces along the outer edge of the city. In the midst of the city dwelt the

with various vicissitudes, for close on two centuries and during that time must have built many new houses.¹⁷ A decade before Prawer published his comments the architect Alex Kesten had already carried out a detailed survey of Frankish buildings in Acre and had provided descriptions of houses, some of which were of a distinctly European (Italian) design.¹⁸ Indeed, as early as 1947 Frankish rural houses in the village of al-Qubaiba north-west of Jerusalem, also of a markedly European design, had been described in detail by Father Bellarmino Bagatti.¹⁹

A more reliable, albeit very brief description of the Frankish houses than those of either Tignor Holmes or Prawer, was published by Denys Pringle:

Documentary and archaeological evidence suggest the existence of two different types of urban house. The oriental type, closed to the outside street and with its main rooms opening on to a central courtyard, containing a cistern to catch the rain from the roofs, is attested by written sources in Jerusalem, and excavated examples at Caesarea. The latter were apparently built in the eleventh century, but were extended and kept in use by the Frankish newcomers in the twelfth. The second type of house is similar to those found in the West, in areas bordering the Mediterranean, with shops, magazines, or a loggia opening onto the street at ground level and several floors of domestic apartments, or 'solars', above. Examples are recorded in Jerusalem, Acre, Caesarea and Nablus.²⁰

That this short paragraph is the most accurate general discussion of housing in the Latin East—and one of the most extensive—clearly illustrates the need for a broad and in-depth examination bringing together the considerable body of archaeological and textual evidence. The present study aims at fulfilling this need.

mechanic citizens and merchants, each in his own especial street according to his trade...." Ludolf of Suchem, p. 51. While it may be that this account relied on an earlier one, the fact that Ludolf was writing long after the destruction of Acre also raises the possibility that it was based on very dated hearsay and imagination.

¹⁷ In Acre alone there is archaeological evidence for well over a hundred domestic buildings of Frankish construction in the limited areas excavated or examined by surveys.

¹⁸ Kesten, 1962, reprinted in Dichter, 1973, pp. 70–98.

¹⁹ Bagatti, 1947/1993.

²⁰ See D. Pringle, "Architecture in the Latin East", p. 170, in J. Riley-Smith, ed., *The Oxford Illustrated History of the Crusades*, Oxford, 1995, pp. 170–71.

C: *Archaeological Research*

One of the earliest published excavations of Frankish housing was from the Ophel Hill south of the Temple Mount in Jerusalem. Excavations carried out by R.A.S. Macalister and J.G. Duncan in 1923–25 and published in 1926 uncovered the fragmentary remains of a courtyard house. It was identified as dating to the Crusader period on the basis of the discovery of ashlar displaying the typically Frankish diagonal tooling.²¹ One of the voussoirs from a door was incised with a cross and another with a T, which, the excavators suggested, might indicate that the house had belonged to the Templar Order headquartered adjacent to the Ophel on the southern extremity of the Temple Mount.²²

In the 1931–33 excavations carried out by C.N. Johns in the *fau-bourg* of Chastiau Pelerin ('Atlit Castle'), the remains of what was probably a group of courtyard houses were uncovered.²³ He also excavated a bathhouse in the *fau-bourg* that had apparently originated as a private house.²⁴ Between 1940 and 1944 monks of the Franciscan Order under the direction of Bagatti excavated an entire Frankish village at al-Qubaiba, north-west of Jerusalem.²⁵ This was the most extensive excavation carried out at a Frankish rural site, and it exposed the remains of around 100 houses, some fragmentary but also many entire ground-floor levels. In 1960–61 Kesten carried out the above-mentioned survey of Frankish period buildings within the Turkish walls of the coastal city of Acre. He subsequently published a report describing 104 Frankish structures, most of them of a domestic nature.²⁶ This survey remains the most comprehensive study of Frankish domestic architecture of Frankish Acre to date. Kesten published a map of the

²¹ On this and other Frankish techniques see C. Clermont-Ganneau, *Archaeological Researches in Palestine During the Years 1873–74*, vol. 1, London, 1899, pp. 38–47; P. Deschamps, *Le Crac des Chevaliers*, text and album, Paris, 1934, pp. 229–39, Plates CXIX, CXX; R. Ellenblum, "Construction Methods in Frankish Rural Settlements", in Kedar, 1992, pp. 170–71; Boas, 1999b, pp. 219–20.

²² R.A.S. Macalister and J. G. Duncan, "Excavations on the Hill of Ophel, Jerusalem, 1923–1925", *PEF Annual* 1923–25 (1926), p. 134. See below, pp. 313–14.

²³ These houses were hardly referred to in the archaeological report published by Johns in 1934. See Johns, 1997 (4), p. 149, Fig. 3. It includes a very brief description and a sketch of the plan in Johns' field diary which is located in the Israel Antiquities Authority Archives: British Mandate ATQ Files: C.N. Johns, Field Notes of 'Atlit.

²⁴ Johns, 1997 (2), pp. 124–29, pls. 51–52, Figs. 22–24.

²⁵ See above n. 19.

²⁶ Kesten, 1962.

city with the Frankish structures marked in bold, which he used to identify and describe the various quarters of the Frankish city, excluding its northern *faubourg*, Montmusard (Figure 2, Plan A).²⁷ In addition he gave brief descriptions of the various houses and streets and of the city's internal fortifications. Kesten divided his discussion of the Frankish city into six sections, each describing a different quarter in the city: the Genoese quarter, the "Rectangular" quarter, the Templar quarter, the Pisan quarter, the Hospitaller quarter, the Venetian quarter and the "North-Eastern Area". Such a division is in some cases justified in that there is a certain correlation between the name of the quarter and the type of domestic architecture found in it. His "underground map"—an allusion to Kesten's belief that this map securely distinguished between structures of the Turkish period and the Frankish remains beneath them—recorded designs that included halls, courtyard houses of varying size (the larger of which he refers to as "mansions") and small, single-room merchant houses.

In 1992–95 I carried out a survey of Frankish domestic buildings in Acre, identifying 24 houses of Frankish date on the basis of certain architectural criteria: the presence of masons' marks, diagonal tooling and various types of construction not generally found in Muslim architecture (marked on Kesten's plan Figure 2, Plan A). At the same time I carried out similar surveys at Akhziv, Caesarea and Jerusalem, as well as in a number of rural sites.²⁸

Excavations in Acre in 1994–95 and in 2007 uncovered additional houses in the north-west corner of the walled city, and in 1994–95 a section of a domestic construction was exposed in the area just to the south of the Hospitaller compound.²⁹ A large domestic structure adjacent to the Hospitaller compound that was used in the Ottoman period as a soap factory has been surveyed but not yet published.³⁰ The domestic buildings identified and described in these surveys and

²⁷ Kesten later published a revised discussion on the quarters of Acre. See A. Kesten, *The Old City of Acre. Re-examination and Conclusions*, 1993, Akko, 1993.

²⁸ On these surveys see Boas, 1999, pp. 95–96 and 1998, pp. 77–79.

²⁹ See Syon and Thatcher, 2000, pp. 11–17; The 2000 excavations at this site and the excavations at the Messika Plot will appear in a forthcoming publication.

³⁰ Unpublished report by Y. Alef (ed.), *Beth Shukri and the Soap Factory, Building 45/18012*. Report of the Conservation Department, Israel Antiquities Authority, 1996 (Hebrew).

excavations makes Acre the single most valuable source for Frankish urban domestic architecture in the Latin East.³¹

At about the same time that Kesten was carrying out his survey, excavations directed by A. Negev in the coastal town of Caesarea uncovered a group of courtyard houses alongside the eastern city wall (Figure 2, Plan C and Figure 3).³² These houses were partly reconstructed by the National Parks and Gardens Authority. In 1979 and 1982 another Frankish building in Caesarea, apparently a merchant's house, was surveyed by Pringle on behalf of the British School of Archaeology in Jerusalem.³³ A house of at least two rooms and a courtyard, built up against the south-east interior corner of the city wall is being exposed in ongoing excavations headed by S. Porath of the Israel Antiquities Authority (IAA).³⁴

Unpublished excavations carried out by M.W. Prausnitz in 1963–64 at Ahziv on the coast north of Acre uncovered some buildings of the Frankish period that were probably private residences.³⁵ Houses of the Crusader period were uncovered in excavations at Caymont (Tel Yoqne'am) in 1978–79 and again in 1993 and were briefly described in published excavation reports.³⁶ A team from Tel Aviv University partially uncovered a Frankish house at Arsur in 1982–84.³⁷ Since 1995 excavations at Jaffa have uncovered a number of Frankish houses.³⁸ Excavations in 1992 exposed several village houses at al-Kurum in the modern Jerusalem suburb of Ramot Allon.³⁹ These were part of a twelfth-century Frankish planned village north of Jerusalem on the

³¹ For a preliminary discussion of the findings of my survey relating to urban houses in Acre as well as Caesarea and Jerusalem see Boas, 2006, pp. 31–43.

³² For Negev's reference to these see A. Negev, "Caesarea" in E. Stern (ed.), *NEAEHL* 1, 1993, p. 278. A broader discussion is found in A. Boas, "Survey of Crusader Structures in Caesarea", *ESI* 17 (no. 105) (1996), pp. 77–79.

³³ See Pringle, 1993, pp. 182–83.

³⁴ These excavations have not yet been published.

³⁵ These buildings are discussed below, p. 329.

³⁶ See Ben-Tor et al., 1979, pp. 68–72, Plate 9; M. Avissar, 2005, pp. 18–24.

³⁷ See I. Roll and O. Tall, *Apollonia-Arsuf. Final Report of the Excavations*, vol. I, Tel Aviv, 1999, pp. 38–39, Fig. 1.27.

³⁸ For a general discussion of recent archaeological work in Jaffa see M. Peilstöcker, "La ville Franque de Jaffa à la lumière des fouilles récentes", *Bulletin Monumental* 164–1 (2006), pp. 99–103.

³⁹ See A. Onn and Y. Rapuano, "Khirbet el-Burj", *ESI* 14 (1994), pp. 88–90.



Figure 2. Kesten’s map of Crusader remains in Acre (courtesy of Amitai Spitzer), map of Jerusalem and map of Caesarea with discussed sites marked on them.



Figure 3. Houses against the eastern city wall of Caesarea (photograph by author).

road leading to Nebi Samwil. In 1994 two additional houses were exposed in excavations at this site.⁴⁰

Outside of the Kingdom of Jerusalem there is almost no published evidence for Frankish domestic buildings. An exception is Cyprus, where a number of Frankish houses have survived in rather fine condition in the town of Nicosia (although many of these date to the fourteenth and fifteenth centuries) and some fragmentary remains survive also in Famagusta. These were discussed by C. Enlart in his monumental publication on Gothic and Renaissance art in Cyprus, first published in 1899.⁴¹ Enlart noted that the houses of Famagusta had almost all disappeared due to “the unholy trade in building materials”.⁴² Regarding the northern Crusader states—the Principalities of Edessa and Antioch and the County of Tripoli—information is very scanty. Nothing is known of Frankish houses in Edessa, and the

⁴⁰ A. Boas, and Y. Arbel, “Jerusalem, Khirbet el-Burj”, *ESI* 109 (1999), p. 73. See also Boas, 1996, pp. 583–94. The final report is in preparation.

⁴¹ Enlart, 1987. Note in particular pages 377–381, 402–14, 454–59.

⁴² *Ibid.*, 458.

quantity and quality of archaeological evidence relating to the city and Principality of Antioch is very disappointing.⁴³ However, promising work includes recent surveys carried out by a joint Syrian-Hungarian archaeological team in an area known as 'Āsūr located near Sāfitā in Syria. Evidence from this and other surveys suggests the existence of a network of rural settlements dating to the Frankish period.⁴⁴

⁴³ On the latter see T. Vorderstrasse, "Archaeology of the Antiochene Region in the Crusader Period" in K. Ciggaart and M. Metcalf, eds., *East and West in the Medieval Eastern Mediterranean*, I, *Antioch from the Byzantine Reconquest Until the End of the Crusader Principality, Acta of the congress held at Hern Castle in May 2003*, Leuven, Paris, Dudley, MA, 2006.

⁴⁴ See Major, 2007, pp. 157–71.

CHAPTER ONE

DOMUS AND DĀR: ARCHITECTURAL SOURCES AND INFLUENCES ON THE FRANKISH HOUSE

As in almost every field of endeavour that the Frankish settlers were involved in, the design and construction of their houses was influenced by what they had known in their countries of origin, what they encountered on their passage East and what they found in the Levant. Consequently, to understand the nature of the houses they built we should first have an idea of the appearance of contemporary houses in the West, in the Byzantine Empire and in the Levant, the materials and methods employed in their construction, their overall design and the types of rooms, installations and furnishings they contained.

A: Contemporary Houses in the West

The Frankish settlers in the towns and villages of the Latin East came from many different regions in Europe. In Jerusalem the majority of the population probably came from France but there were settlers and pilgrims from Spain, Germany, Hungary and many other parts of Europe.¹ In Acre many of the citizens were merchants, from the maritime cities of Italy—Genoa, Venice and Pisa—as well as from Provence and Spain; and parts of the city were occupied chiefly by settlers from England and Germany.² On the basis of their family names we learn that even in the planned villages set up by the Franks in the rural

¹ In Jerusalem there was a street known as the Street of the Spaniards (Ruga Hispania/Ispaniae) located in the north of the city leading from St Stephan's Gate south along the Tyropaeon Valley, there was a German street (*Rue des Alemans*) and a German quarter in the area of the Church of St Mary of the Germans (now in the Jewish Quarter); there may also have been an area settled by Provencals in the Armenian Quarter near the Postern of Beaucayre.

² The northern part of the *burgus novus* (Montmusard) is referred to on some of the contemporary maps of Acre as occupied by settlers from England (*Co est le burg ki est apelé Munt Musard; si est tut le plus inhabite de Engleis*—B.L., Roy.14.C.VII, fol. 4v). This would have been around the headquarters of the Military Order of St Thomas à Becket. There was also a tower on the eastern defences known as the English Tower (Turris Anglorum).

areas of the kingdom there were settlers from a variety of countries.³ Having establishing themselves in the new towns and villages, these settlers built houses that were influenced at least to some extent by the architecture they knew in their places of origin.

In Europe, with its great cultural diversity, many different types of houses were constructed employing a number of different designs and materials and a variety of decorative elements. From region to region throughout the West, houses differed considerably, and this makes it difficult to draw up a set of criteria with which to make comparisons with the houses of the Latin East. Nevertheless, certain basic types of houses appear in the many regions from which the settlers came, and I shall deal here with those most relevant for comparison—houses on burgage plots, merchant houses, tower houses, hall houses and courtyard houses.

Urban Houses

Most of the houses found in towns fall into one of five categories: houses on narrow burgage plots, merchant palaces, tower houses, courtyard houses and hall houses.

a) Houses on Burgage Plots

The term “town house” in the West is often synonymous with the merchant house. Many of the houses in the heart of a town had shops facing the street and the street frontage was an important element of their design. It was the point of contact between the manufacturer/merchant and his clientele. The need of many urban dwellers to possess access to a street, not a mere lane or cul-de-sac as was often the case with houses in Near Eastern towns, resulted in the typical aspect of European urban dwellings. These were long and narrow, and often tall buildings, the façade sometimes attractively decorated with a shop opening onto the street and the living quarters behind, above, or both. The importance of the shop and its access is reflected in the regulations passed in some places to prevent the blocking of communal entry. In general the rights of access were carefully defined.⁴

³ At Bethgibelin for example there were settlers from Auvergne, Gascony, Lombardy, Poitou, Catalonia, Burgundy, Flanders and Carcassonne. See Prawer, 1972, pp. 83; Ellenblum, 1998, pp. 76–77.

⁴ D. Matthew, *The Norman Kingdom of Sicily*, Cambridge, 1992, p. 125.

The long and narrow plots typical of towns and villages are frequently referred to as *burgage* plots because of the *burgage* tenure by which they were usually held.⁵ These plots typically had a ratio between length and breadth of more than 5:1, the depth of these buildings compensated for their narrowness and they often had two or more low storeys. In Italy the height of these houses was often about 8 m. all told, and house lengths varied considerably, some were no more than 10 m., but they could be as much as 30 m. or more.⁶ Modest town houses in Rome had a porch on the ground floor, arched in the front and on the side, and a loft above. Such houses in England, France and Italy generally had a simple façade, a door and two windows at ground level—often with fold-out stalls (*banca*) for displaying merchandise—and additional windows above. In the better merchant houses the upper-floor façade could be decorated with stone-carving. In simple houses the upper storey might have loopholes rather than windows.⁷ Some houses had an undercroft for storage, accessed by an external staircase; in many instances the upper storeys were also reached by an external staircase,⁸ in others the staircase was located inside, parallel to the façade.⁹

The basic elements in a medieval town house in the West were a hall (*sala*) (in the houses of wealthy merchants it was large and generally located on the upper level), a bedchamber, a kitchen and a work and storage area that doubled as a shop. There were often no more than two rooms on each level. An elegant Roman residence in 1127 had a room with a brick fireplace (*caminata*) above and below, a staircase in front and a porch and garden.¹⁰ In northern Italy the town houses were tall and had merchant and artisan shops on the ground floor while the upper storeys housed workers and masters. In southern Italy houses had courtyards, balconies and communicating roofs, and while some of them had wells others even had piped water.¹¹

⁵ For a definition of the *burgage* tenure see Prawer, 1980, pp. 250–52.

⁶ See R. Krautheimer, *Rome. Profile of a City, 312–1308*, Princeton, N.J., 1980, pp. 289–90.

⁷ *Ibid.*, p. 289.

⁸ *Ibid.*, p. 290.

⁹ *Ibid.*, p. 398, Fig. 234.

¹⁰ *Ibid.*, p. 290.

¹¹ Matthew, 1992, p. 125.

b) *Merchant Palaces*

A quite different type of town house built by merchants was the merchant palace, well-known mainly from later examples in the Italian maritime cities. This type of dwelling was at once luxurious living quarters, a place for the storage of goods and a symbol of the wealth and importance of its owner. The typical merchant's palace included a large ground floor area that in the twelfth and thirteenth centuries was still used to store the merchant's goods (in later palaces it was often for private use) and luxurious domestic apartments on two or three storeys above. Some of these houses had elaborately decorated façades that served to demonstrate the merchant's wealth and importance. They are typical of the great Italian maritime cities and are found also in the towns of France, Germany and elsewhere.

c) *Tower Houses*

In the Middle Ages (mainly from the eleventh century on) tower houses became a very prominent part of the landscape of many Italian towns—not only those very tall towers that cluster around the heart of such medieval Italian towns as San Gimignano or Pavia but much smaller structures, four or five storeys high, often attached to the corner of a private house. It is often assumed that these towers stood alone, but this was rarely the case; in general they were constructed in clusters or constituted part of a mansion or palace and the terms *turris* and *domus* frequently appear together in contemporary references.¹² The defensive nature of these buildings is displayed in their massive construction and the use of narrow windows and doors, often well above ground level, the latter occasionally reached only by a ladder. Some towers—one on Florence's via delle Terme is an example—had brackets and putlog holes for hoarding.

d) *Courtyard Houses*

The southern European tradition of courtyard houses can be traced back to the atrium and peristyle layout of Greek and Roman houses. This courtyard design was maintained in Italy, Spain and southern France, although the large courtyard houses and mansions with enclosed courtyards of the medieval period had little in common with the ancient ones. The continued popularity of the enclosed courtyard

¹² Krautheimer, 1980, p. 307.

design in southern Europe is, in part, for the same reason as the popularity of this design in the Near East. It provides the best possible protection against a harsh climate and against marauders and thieves. But the principal reason for its popularity in the Muslim East—the provision of privacy to the family members—was perhaps less of a factor in European Christian society.

e) *Hall Houses*

Hall houses were of standard design in urban and rural settlements in many parts of the West. In England for example the great majority of medieval houses comprised a hall with a service room (or rooms) at one end. The hall was the central feature of these houses, covering the whole or a large portion of either the ground or upper floor. The kitchen and sleeping quarters were usually located at one end (occasionally at either end) or were located in separate wings. Heating in these halls was often by means of an open hearth in the centre of the floor, with an opening in the roof for ventilation.¹³

Village Houses

Here again the diversity of design is considerable but some features are common to most village houses. A typical village house was of one or two storeys at most; many were of only one storey and occasionally of only one room. Village houses in England excavated at Seacourt in Oxfordshire and Wharram Percy in Yorkshire had internal dimensions of c. 3 by 3 m. or c. 3 by 6 m. Even the few larger houses in these settlements were exceedingly small. The room or rooms were usually open to the roof. They had a central hearth but no chimney and sometimes no opening in the roof, which means they would have been smoke-filled.¹⁴

The kitchen played a central and essential role in these dwellings, and this is reflected in the reference to it as: “the house within the house” which appears in contemporary sources.¹⁵ In the kitchen was the hearth, often surrounded by cooking utensils, a table and benches. People sometimes slept in the kitchen or in the surrounding rooms for warmth.

¹³ Lloyd, 1984, p. 49.

¹⁴ T. Rowley, *The High Middle Ages*, London and New York, 1986, pp. 70–71.

¹⁵ Le Roy Ladurie, 1984, p. 38.

B: *Contemporary Houses in the Byzantine Empire*

The First Crusade passed through the Byzantine Empire and areas that had formerly been under Byzantine control, and the Latin states maintained connections with Byzantium throughout the Crusader period, especially after the Fourth Crusade and the Frankish conquest of Constantinople in 1204. The influence of Byzantine military architecture on Frankish castles is an issue that has long been debated.¹⁶ To what extent the Franks were influenced by Byzantine daily life and domestic architecture is a subject that has not really been dealt with. Evidence suggests that there were at least specific elements of Byzantine daily life and domestic elements that the Franks adopted. The use by the Franks of fireplaces and wall chimneys is a possible example of such an influence.

Medieval domestic buildings have been excavated in a number of sites in areas that were under Byzantine rule and after the Fourth Crusade (1204) came under Frankish rule. Medieval houses have been excavated at Athens and Corinth.¹⁷ A courtyard house in Athens was built against the medieval city wall next to a gate.¹⁸ It was entered from a street to the north via a passage that led to a small courtyard with rooms around it on three sides (the city wall forming the fourth side. A house excavated in the southern part of the central

¹⁶ See E. Rey, *Etude sur les monuments de l'architecture militaire des croisés en Syrie. Collection des documents inédits sur l'histoire de France, series 1, Histoire politique*, Paris, 1871, pp. 9–10; C. Oman, *History of the Art of War in the Middle Ages* (1898), revised ed. Ithaca, 1953, p. 72; T.E. Lawrence, *Crusader Castles*, Oxford, 1988, pp. 4–5, 25–34 and passim (see also D Pringle's introduction to the same work, pp. xxviii–xxx, xxxvii); H. Kennedy, *Crusader Castles*, Cambridge, 1994, pp. 14–17; Pringle in Lawrence, 1988, pp. XXIV–XXVII. For a recent discussion of this debate over influences see R. Ellenblum, *Crusader Castles and Modern Histories*, Cambridge, 2007, notably Chapter 5.

¹⁷ Byzantine houses in Athens which continued in use from the tenth to the twelfth and thirteenth centuries and later, were uncovered on the Hill of Colonus and to its north (north of the Theseum). Setton describes these as simple structures with rubble walls overlaid with sun-baked brick, and floors of packed earth. They measured 8 by 16 m., some with a second storey, and included bedrooms, a kitchen or hearth, and a paved court with a latrine. There were double doors and channels to dispose of sewage. See K.M. Setton, "The Archaeology of Medieval Athens", in id., *Athens in the Middle Ages*, London, 1975, vol. 1, p. 253. On Corinth see Scanlon, 1957, pp. 66–7; C.K. Williams, II and O.H. Zervos, "Frankish Corinth" (Annual Reports), *Hesperia* 61.2 (1992), pp. 133–91; 63.1 (1994), pp. 1–56; 64.1 (1995), pp. 1–60.

¹⁸ A. Frantz, *The Middle Ages in the Athenian Agora*, Princeton, 1961 (no page number), Fig. 34.

area of Corinth consisted of at least four rooms and an open area, apparently a courtyard.¹⁹ The rooms were situated to the north and east of the courtyard. One room measuring 5 by 6 m. communicated only with the courtyard and may have been used for storage. On the east side of the courtyard a door gave access to a small room through which the main room of the complex was entered. The roof of this room, which occupied the north-east portion of the building, was supported slightly east of its centre by a transverse arch. Another twelfth-century house excavated to the north-west had a large central courtyard, two long halls north and south, and smaller rooms on the other two sides.

A number of houses excavated in Pergamon (which did not come under Latin rule but was part of the Empire of Nicaea after 1204) have been dated to between the eleventh and fourteenth centuries.²⁰ These were mainly single-storey buildings surrounding a courtyard or attached to a courtyard on two or three sides. One house with an upper storey had a staircase in the courtyard. Each house had separate areas for work, storage, living and sleeping. Several of the houses had a hearth built into a wall of the kitchen. Some had chimneys. The roofs, constructed of wooden beams and slats, were sloping and tiled. Floors in the houses in Athens were usually made of packed earth. Heating in private houses was sometimes by means of fireplaces and wall chimneys; Pergamon has examples of these dating to the thirteenth century.²¹ The tradition of fireplaces and wall chimneys in the Near East goes all the way back to the Neolithic period.²² The water supply in medieval Athens was from wells. Alternatively, in Thebes wells were uncommon because there was an abundant supply of natural water which was stored in large plastered *pithoi* built under the ground floor.²³

¹⁹ Scanlon, 1957, pp. 66–7.

²⁰ Rheidt, 1990, pp. 195–204.

²¹ See photograph in Rheidt, 1990, Plate 1, 3.

²² Early sixth millennium BCE houses in Umm Dabaghiyah in northern Iraq had ovens on external walls that protruded into rooms where there was a hearth with a plaster curb and a plaster chimney hood and flue in the wall. See *Iraq* 37 (1975), Plate 4b. On the topic of chimneys and fireplaces see discussion below, pp. 164–71.

²³ S. Kalopissi-Verti, “Relations between East and West in the Lordship of Athens and Thebes after 1204: Archaeological and Artistic Evidence”, in P. Edbury and S. Kalopissi-Verti, eds., *Archaeology and the Crusades*, Athens, 2007, pp. 8–9.

C: *Contemporary Houses in the Levant*

The design of domestic buildings of the Islamic world shows a greater degree of unity than in the West. However, this uniformity coexists with a remarkable diversity of building materials and decoration, and on the surface it may appear that there is little common ground between houses from the different areas of the Muslim world. Nevertheless, the basic elements of Islamic house design are found throughout.

Muslim Houses in Excavations

Excavations in the mercantile city of Siraf on the east coast of the Persian Gulf have revealed a wealthy suburb of the ninth and tenth centuries.²⁴ The houses are solidly built, using stone and gypsum-mortar; the outer walls rest on boulder foundations set in a hard, water-proof mixture of clay, lime and ash known as *sārūj*. The outer walls are buttressed every 2.5 to 3 m. and could have supported structures of several storeys such as those described as having existed in Siraf by the tenth-century geographer Istakhri, who compared them with the multi-storey buildings of Fustat. Each house was different from its neighbours but all had a central paved courtyard with one or more entrances from which rooms could be entered. The rooms had plaster floors and elaborate stucco decoration. Windows were scarce—in spite of the preservation of outer walls up to the height of 3.5 m., only a single possible window was found. Natural light would have entered these rooms only through the doors into the courtyard. Although the houses were richly embellished and clearly belonged to wealthy merchants, they lacked piped water and only two were found to have wells. There were no latrines (at least on the ground floor), nor was there a sewage system.

Excavations have shown that the houses of Fustat, Egypt dating to the Tulunid dynasty (868–905) had a central courtyard entered at one of its corners. On all four sides was an *iwan*, some deep, others shallow.²⁵ On one of the sides was an anteroom with three bays and at its far end the central *iwan* and the two flanking rooms. These

²⁴ Whitehouse, 1971, pp. 255–62. See also D. Whitehouse, “Excavations at Siraf (Interim Reports)” in *Iran* 7 (1969), pp. 39–62; *Iran* 8 (1970), pp. 1–18 and *Iran* 9 (1971), pp. 1–17.

²⁵ The *iwan* was a roofed or vaulted hall open at one side facing the courtyard.

houses were brick-built and several storeys high. They had a system of conduits carrying fresh water and disposing of sewage. The courtyards were decorated with plants and in some cases had fountains and pools.²⁶ In Cairene houses the function of the courtyard was often replaced by a *qa'a*, a central hall. Many of these houses were of five or six storeys.²⁷ They had no external features except for a fine portal and high windows. A twisting, masked entrance with the doorkeeper (*bawwāb*) seat against a wall led to the inner court. They contained little in the way of furniture.²⁸

The excavations at Fustat in particular are a valuable source of information on aspects of Egyptian domestic surroundings;²⁹ but, as historian Shelomo Dov Goitein notes, they were not suddenly destroyed and quickly covered like Pompeii but were gradually abandoned over a long period of time and dismantled for building materials; as a result their interpretation is often difficult.³⁰

Some pre-Frankish Islamic houses have been excavated in Israel. In Jerusalem a tenth-eleventh century house was excavated and published in a very brief description.³¹ It was flat-roofed, with rooms around three sides of a courtyard and a high wall on the fourth. The

²⁶ G. Marçais, "Dār" *EI*, vol. 2, Leiden, 1991, p. 114.

²⁷ Russell, 1962, p. 52.

²⁸ *Ibid.*, pp. 52–4.

²⁹ For the excavations of 1912–1920 see A. Bahgat and A. Gabriel, *Fouilles d'al Foustat*, Paris, 1921. On the domestic architecture see also A. Gabriel, *Les fouilles d'al Foustat et les origines de la maison arabe en Egypte*, Paris, 1921. More recent excavations were published by Scanlon and Kubiak between 1965 and 1984. See G.T. Scanlon, "Preliminary Report: Excavations at Fustat, 1964", *JARCE* 4 (1965), pp. 7–30, Plates I–XV; "Preliminary Report: Excavations at Fustat, 1965, Part I", *JARCE* 5 (1966), pp. 83–112; "Preliminary Report: Excavations at Fustat, 1965, Part I", *JARCE* 6 (1967), pp. 83–112; "Preliminary Report: Excavations at Fustat, 1965, Part II", *JARCE* 6 (1967), pp. 65–86; W.P. Kubiak and G.T. Scanlon, "Fustat Expedition: Preliminary Report, 1966", *JARCE* 10 (1973), pp. 11–26, Plates I–IX; G.T. Scanlon, "Fustat Expedition: Preliminary Report, 1968, Part I", *JARCE* 11 (1965), pp. 81–91, Plates XV–XXVIII; "Fustat Expedition: Preliminary Report, 1968, Part II", *JARCE* 13 (1967), pp. 69–90; W.P. Kubiak and G.T. Scanlon, "Fustat Expedition: Preliminary Report, 1971, Part I", *JARCE* 16 (1979), pp. 103–24, Plates XI–XVII; "Fustat Expedition: Preliminary Report, 1971, Part II", *JARCE* 17 (1980), pp. 77–96, Plates XV–XXV; G.T. Scanlon, "Fustat Expedition: Preliminary Report, 1972, Part I", *JARCE* 18 (1981), pp. 59–86, Plates VII–XIV; "Fustat Expedition: Preliminary Report, 1972, Part II", *JARCE* 19 (1982), pp. 119–29, Plates X–XI; "Fustat Expedition: Preliminary Report, 1978", *JARCE* 21 (1984), pp. 1–38, Plates X–XI.

³⁰ Goitein, IV, 1983, pp. 53–4.

³¹ M. Ben-Dov, *In the Shadow of the Temple. The Discovery of Ancient Jerusalem*, Jerusalem, 1982, pp. 327–28.

courtyard was accessed via a narrow passage between two of the rooms. The doors of the rooms faced the courtyard but there was also access directly from the street into one of the rooms. The roof area would have been reached by a ladder. Abbasid-period houses excavated in Tiberias (Gannei Hammat) in 1993 had two storeys and enclosed partly roofed courtyards.³² Floors were of compacted earth but the courtyards were paved with stone. There were covered drains. The kitchen in one of the houses had a stone shelf and there were *tabuns* (small clay ovens). A row of pillars supported the roof in the courtyard of one of the houses. The roof was probably flat. Stairs gave access to the upper-storey. One complex in Tiberias originally consisted of two facing two-room dwellings each with its own courtyard.³³ At some stage the two were joined to form a single large house of two storeys with a staircase in the north-east corner of the courtyard leading up to the upper-floor living quarters, which were paved with mosaic.

A medieval house was excavated in Baisan (Beth She'an).³⁴ Its first stage, dating to the Abbasid-Fatimid period, consisted of ten paved rooms, four to the east, four to the west and two to the south, with a paved central courtyard. The rooms averaged at 2 by 4 m. (internal), and the courtyard measured c. 6 by 8 m. The house was constructed directly on the collapsed buildings destroyed in the 749 CE earthquake and the walls contain several architectural fragments in secondary use. In a second phase, in the Ayyubid-Mamluk period, the courtyard was lengthened to the east and the rooms on either side were unified by the removal of some walls and the addition of others.

In the western quarter of Korazim, north of the Sea of Galilee, a number of houses dating to the Frankish period were excavated in the early 1980s.³⁵ One of these houses measured 10 by 10 m. (or 8 by 8 m. according to a later report). It was constructed of fieldstone walls preserved to the height of 2.5 m. in irregular courses that were plastered over. The entrance was to the west through an arched gateway. Each wall had two narrow windows (15 cm wide by 40 cm high).

³² A. Onn, personal communication.

³³ Y. Hirschfeld, "Tiberias", *ESI* 9 (1989–1990), p. 108.

³⁴ G. Foerster and Y. Tsafir, "City Centre (North): The Abbasid and Fatimid Periods (Stratum 3)", *ESI* 11 (1989–1991), p. 19, Figs. 23, 30.

³⁵ Z. Yeivin, "Korazin", *ESI* 1 (1982), p. 64; "Korazim 1983/1984", *ESI* 3 (1984), p. 68.

Three double transverse arches supported on pilasters on the north and south walls supported a stone roof.

Muslim Houses in the Geniza Documents

Together with information from excavations, the Cairo *Geniza* is a source of great value.³⁶ The evidence specifically relating to the private house is invaluable, containing references to various types of houses—large houses, small houses, garden houses, bazaar houses and Nile-bank houses. Goitein places emphasis on the family house built around a central courtyard. The entrance to a typical courtyard house was via an arched gateway (in the larger houses) or a gate with a double-leaved door.³⁷ Some houses had more than one entrance. Doors were of wood as were the locks.³⁸ There was often a window balcony above the door. The door led into a corridor or hallway (*dihlīz*). It could contain a built-in bench (*mastaba*). The corridor led to the main floor (*qa'a*)—the courtyard and the buildings surrounding it. Courtyards could be quite large and planted with a garden, or small; and they were not always open to the sky.³⁹ There could also be more than one. Often the *qa'a* contained workshops. The living room (*majlis*) occupied the main part of the *qa'a*. Fatimid and Ayyubid houses consisted of one or several large rooms connected to several small chambers. The *iwān*, or *liwān*, is not represented in the *Geniza* in pre-Mamluk Egyptian houses although, as noted, certain Tulunid period houses in Fustat had prominent *iwāns*. Most houses had wells and cisterns and the kitchens and latrines were situated nearby in the *qa'a*.⁴⁰ Staircases to upstairs apartments were generally constructed of stone, occasionally of wood or brick. The documents frequently mention staircases on stone arches. Roofs were usually flat. Sometimes there were stables or storerooms.

³⁶ The documents in the Cairo *Geniza* contain a remarkable wealth of information on a broad span of topics relating to daily life, commerce and religious matters. They have been discussed in the numerous erudite papers of S.D. Goitein and others and in the comprehensive work: S.D. Goitein, *The Mediterranean Society*, 6 vols., Berkeley, Los Angeles, London, 1967–1994.

³⁷ *Ibid.*, p. 60.

³⁸ *Ibid.*, p. 61.

³⁹ *Ibid.*, p. 63.

⁴⁰ *Ibid.*, p. 69.

The Traditional Muslim Town House

The principal components of the traditional Eastern house were the living rooms, the courtyard or garden, the kitchen and storage space including underground rooms. The door of the Islamic house might be considered to be a smaller version of the city gate with which it shared certain features. It was generally designed to give only indirect access to the courtyard in order to restrict unauthorised entry. Windows tended to be small, often located quite high in the walls and invariably placed in such a manner that there was no direct view from the windows of the house opposite. The roof was in most cases flat and was used as a work area and also for sleeping on hot summer nights. However, in regions of high rainfall, as in the West, sloping roofs were employed. Decoration on house exteriors was limited, although doors and windows were occasionally treated in a decorative manner. A loggia where one could sit and observe passers-by was sometimes located above the entrance to the house.

The courtyard was the heart of the traditional Islamic house. The house was oriented away from the street to the central courtyard, and access to the rooms around it was only from the courtyard. This ensured privacy, in particular for the women of the household, which was a central requirement of Islam. G.E. von Grunebaum described these features:

...the complex of its constituent buildings is so arranged as to secure a maximum of privacy to its inhabitants. This desire for privacy, which is the outgrowth of the social mores demanding as complete a withdrawal from the public as possible of the women of the family, inspires the insistence that windows and roofs must be constructed in such a way as to prevent anyone's intruding unseen into the intimacy of his neighbours' lives. For the same reason, house doors on opposite sides of a street may not face each other.⁴¹

The Centrality of the Courtyard

The complex weave of Islamic domestic architecture is held together by an unbroken thread of tradition that is often remarkably tenacious in the face of powerful external forces. The shape of a house, the materials used in its construction and even the manner in which it is deco-

⁴¹ von Grunebaum, 1961, p. 148.

rated are all expressions of the environment in which the people who created it live. Today a widely available diversity of building materials has brought imitation Spanish houses, neo-Tudor cottages and a variety of other cultural styles to the suburbs of many Western cities. Yet there is still in each locality a certain degree of uniformity in housing which, even if less obvious than in the past and less tied to past traditions, is evidence of local patterns of living and tastes that cannot be entirely suppressed. More than a reflection of the immediate environment, these traditions are a record of the historical development of a people. This is particularly true of the Islamic world.⁴²

The most traditional feature of Islamic houses is the courtyard. Indeed, the Arabic word for house—*dār*—literally means enclosure. Whatever the immediate surroundings—north African coast, Arabian desert, Syrian steppe lands—we can always determine in the courtyard house the elements of an architecture that goes back to the earliest days of Islam, to the southern Arabian landscape and climate and to the lifestyle set out in the teachings of the Prophet. The house built by Mohammad for himself and his family on his arrival in Medina was intended both as a dwelling and as a meeting place for his followers. It had as its central feature a courtyard surrounded by walls. On one of these walls a shelter from the sun was constructed for the convenience of the faithful at prayer. The Prophet's wives occupied rooms built along another side. According to tradition the courtyard was entered via a porch of palm branches that could be blocked with camel-hair curtains.⁴³ At this early stage the courtyard was already a central feature, as was the segregation of the women into their own separate area.

Two basic courtyard house types are found in Islam: a) the courtyard-attached house where the courtyard borders the house providing a protected area contiguous with the house but not enclosed except by walls; b) the central courtyard house where the house encloses a courtyard on all sides.

⁴² An exception is the modern Palestinian village house. The old village architecture that blended so well into the landscape has all but disappeared. Anyone travelling through the Galilee, the West Bank or elsewhere in the region is struck by the modern houses springing up around the cores of the old villages, the stone lined concrete constructions, with gabled, sometimes pagoda-shaped roofs. They retain little if anything of the tradition of the Palestinian village house although even they have amongst themselves developed a unity of sorts.

⁴³ See Marçais, 1991, p. 113.

The former is characteristic of rural areas while the latter type is more typical of towns, where building space is less easily attainable and more expensive. The courtyard provided protection from the sun and wind, important in the hot and arid climate typical of a large part of the Arab world. It also served as a light well to the rooms around it which, as noted, had few or no windows on their outer walls. In many Arab houses the courtyard served as a protected work area. In others this function was taken over by a flat spacious roof area. The courtyard provided for the members of the household, particularly the women, an open area in which they could lead something of an outdoor life in complete privacy. Where greater social freedom existed such as in the Aurès Mountains of Algeria, the living area opened directly to the street as it did in the West.⁴⁴ In Lebanon individual dwellings were grouped around an enclosed common court with a single entrance and the courtyard house was an uncommon type.⁴⁵ A similar arrangement of individual houses around a common courtyard was found early in the Islamic period in small settlements such as Khirbat Abu Suwwana, a village site about 7 km. east of Jerusalem dated to the Umayyad period.⁴⁶

The central courtyard house became typical of most towns in the Islamic world. The courtyard was an integral part of these houses and unlike houses sharing a communal courtyard, it was a distinctly private feature. In Samarra courtyard houses were often very large, sometimes containing as many as 50 rooms. They were all built on a similar plan: a covered passage led from the street or lane into a regular court surrounded by small living rooms and offices, with a T-shaped main room and two corner rooms on the narrower side. This grouping of rooms was occasionally repeated in a second court, the latter probably representing the *sarāy* and the *harīm*. It may be that these groupings on opposite sides of the courtyard were summer and winter dwellings. There were also rectangular dwellings and store rooms around the courtyard and often additional small courts and store rooms. Some of the houses had an open pillared hall and a ventilated underground

⁴⁴ G.T. Petherbridge, "The House and Society", in G. Mitchell (ed.), *Architecture of the Islamic World*, London, 1978, p. 200.

⁴⁵ Ibid.

⁴⁶ See Sion, 1992, pp. 53–7.

living room (*sirdāb*). There were baths and a drainage system and occasionally wells.⁴⁷

Underground rooms were a common feature in many parts of the Muslim world including Afghanistan, Iran, Iraq and Egypt. In the eleventh century Nāser-e Khosraw noted that some houses in the Persian town of Arrajan had as many rooms below ground as above.⁴⁸ Two types of underground rooms appear in Islamic houses—the *sirdāb*, a room built underground or partly underground as a cool place to occupy during particularly hot weather⁴⁹ and the *matmura*, a buried storage room or storage space also used to hide valuables.⁵⁰

When we speak of the garden in an Islamic house we are generally referring to an internal courtyard that was often planted and functioned as a cool enclosed living space. However, there was also the *bustan*—a vegetable and fruit garden not at the centre of the house but generally separated from it and outside the town walls.

Cisterns were an essential feature in the towns and villages in the Near East and although smaller houses might use a public water supply most houses, even the simplest village houses, generally had a water cistern. The two prevalent types were bell-shaped rock-cut cisterns and constructed barrel vaults. Both types were fed by pipes and channels carrying water collected on the roof and in the courtyards and conveyed to a sump-shaft or settling tank and from there via a pipe to the adjacent cistern. In Fustat water for cleaning and cooking was collected and carried by a separate system from water for drinking purposes.⁵¹

There were sometimes systems for the disposal of sewage. At Siraf pipes apparently carried rainwater from the roofs to cisterns and others carried sewage from upstairs latrines into pits that were excavated in neighbouring alleyways at the foot of the walls.⁵² In the Abbasid period people took care not to dig these sewage pits in the main streets for obvious reasons, but in later periods less care was taken and a *fatwa* (formal legal opinion on a point of law) had to be issued

⁴⁷ Ahsan, 1979, p. 172.

⁴⁸ Nāser-e Khosraw, p. 97.

⁴⁹ Ahsan, 1979, pp. 184–85.

⁵⁰ Goitein, 1983, pp. 74–5.

⁵¹ Scanlon, 1970, p. 192.

⁵² See D. Whitehouse, 1971, p. 262.

prohibiting the digging of drains and pits in the streets.⁵³ Latrines varied from makeshift to luxurious. The poor in rural areas used bushes and open fields but the wealthy built their privies at considerable expense. For example, a latrine built by a wealthy merchant of Baghdad had gypsum plaster on the top with mortar at the bottom. The roof was flat and the floor had marble paving. The door had slats made of alternating teak and ivory.⁵⁴ Simple well-latrines were more common. They had a stone slab serving as a seat over a pit.

The traditional Arab house had little in the way of large-scale movable furniture such as tables, chairs, beds and cupboards. Chairs were found only in the houses of the wealthy. Otherwise there were stone and mortar-built benches. Cupboards were recesses in the walls with wooden doors. Open niches built in the walls, often decorated, were and still are a characteristic feature of domestic architecture throughout the Islamic world.⁵⁵ They are used both for storage and for display. Heating, cooking and baking in the Islamic house was carried out by means of a brazier (*kānūn*) or oven (*tābūn*); occasionally a hole in the roof allowed the smoke escape.

A wide range of construction materials was used throughout the different regions of the Islamic world, varying from rammed earth and clay to sun-baked brick, kiln-fired brick, wood, rubble, gypsum plaster and stone. Mosaic and marble are found in the houses of the wealthy. According to Nāser-e Khosraw, in Ramla, because of the large quantity of marble available for building purposes it was used even in private houses.⁵⁶ Lime was used for whitewashing interiors and gypsum mortar was used to set limestone. Mud-brick was sometimes covered with stucco. Tiles were also occasionally employed in private houses.

Good quality building stone was abundantly available in many regions. The profession of mason was a complex one, there being mason specialists for different needs: simple quarry men to cut the stone in the quarry, on-site specialists to cut the freed stone, masons to prepare roughly shaped stones for interior walls and foundations, experts to

⁵³ Ahsan, 1979, p. 174. The late eleventh and early twelfth century Spanish author Ibn 'Abdun wrote: The sewer men must be forbidden to dig holes in the streets, as this harms them and causes injury to people except when they are cleaning the entire street. See Muhammad Ibn 'Abdun, "Risala fi'l-Qada wa'l-hisba", in E. Lévi-Provençal, ed., *Documents arabes inédits sur la vie sociable et économique en occident musulman au moyen âge*, Le Caire, 1955, pp. 43–51.

⁵⁴ Ahsan, 1979, p. 190.

⁵⁵ Petherbridge, 1978, p. 199.

⁵⁶ Nāser-e Khosraw, p. 20.

prepare quality finished ashlar, skilled carvers to decorate, builders to construct the outer walls, masons to prepare the rougher stonework of interior walls (to be plastered) and masons to prepare the rubble cores (*debesh*) between the inner and outer faces of external walls.

The Muslim Rural House

The principal distinction between urban and rural dwellings in the East is the location of the courtyard. Whereas the typical urban house is designed around a central courtyard the village house is more often attached to a courtyard with high enclosure walls. The lower value of rural land allowed for less rigidity in design. Consequently there is great variety in the design of rural houses throughout the Muslim world. In Afghan villages houses are domed mud-brick structures grouped around courtyards. Houses in Iran and Iraq are also often built of mud bricks.⁵⁷ In parts of north Africa courtyards are flanked by barrel-vaulted rooms. In central Africa nomadic dwellings consist of woven reed structures within a walled enclosure. In Syria-Palestine, except for the Bedouin, the use of stone replaced the hides and cloth of nomadic structures as soon as settlements became permanent but the layout of the permanent dwelling was basically the same as that of the nomadic dwelling—with sheltered quarters on one or two sides of a walled-in yard. This type of house is found for example at Khirbat Abu Suwwana. The site consists of clusters of small houses built around communal courtyards. They have little in common with the traditional Palestinian rural dwelling discussed below but were a type of house appropriate to the early post-nomadic sedentary stage of settlement. The main features of these rooms are living-sleeping rooms, work-rooms, storage rooms and separate ovens. The walls were constructed of ashlar (some in secondary use) and fieldstones. Floors were cut in the bedrock. These were very simple one-storey dwellings, only one stage advanced from tent settlements. Stairs in one courtyard apparently led to a roof. Only one room had plastered walls.

A farm of Umayyad date at Nahal Mitnan, 30 km. west of Mitzpe Ramon in the Negev, is a type of farming settlement characteristic

⁵⁷ Mud bricks were unbaked bricks of clay which was dampened, mixed with straw and moulded in open wooden frames. They were manufactured and laid by a single man using mud mortar made from clay found at or close to the building site. Baked bricks were made from a better quality of clay mixed with sand and fired for three days. A gypsum or lime-sand mortar was used to lay them. Gypsum was used to plaster walls, and lime to waterproof roofs, canals, drains and cisterns.

of border regions during this period. It measures 15 by 33 m. with walls built of two courses of rough-hewn stones. Floors are of beaten earth, crushed limestone and ash. Raised platforms may have served as beds. Remnants of wood in the building suggest that the roof construction incorporated timber beams. The farm was composed of separate dwelling units, each containing one to three rooms and a separate courtyard.⁵⁸

The Palestinian Traditional Rural House

The traditional house in Palestinian villages is a distinctive type of structure that has little in common with rural dwellings found elsewhere in the Arab world. It appears to have developed over a long period in a manner that made it remarkably appropriate to local conditions and to the requirements of the Palestinian Arab society. It owed more to the ancient domestic buildings of the Holy Land than to the domestic architecture of other Muslim countries.⁵⁹ The principal difference between the Palestinian rural dwelling and the types of rural house found in most neighbouring countries appears to be that while the latter were divided into at least two or three rooms with clear functional divisions, the former were often single-room buildings that were used simultaneously for a number of activities.⁶⁰ Rather than occurring in separate rooms, the various activities of the household took place on two different levels: a) the front entrance level (*qa'a al-bayt*), sometimes used together with the space underneath it for livestock and for storing farming equipment, b) the raised level at the back (*mastaba*) used as a living space for the family, and the food storage space (*rāwiya*), also raised and divided from the *mastaba* by storage bins (*khawābi'*).⁶¹ The construction of these houses became an important communal ritual.⁶²

The main entrance, which faced the courtyard was usually oriented to the east or south to allow maximum light penetration as well as

⁵⁸ M. Haiman, "Early Islamic Farm at Nahal Mitnan", *Atiqot* 26 (1994), pp. 1–13.

⁵⁹ Rabbinic texts of the Roman-Byzantine period are a valuable source for comparison as they present a remarkably detailed picture of daily life and of the house. See Y. Hirschfeld, 1995, pp. 217–80.

⁶⁰ *Ibid.*, pp. 116–17, 132–34.

⁶¹ The term *qa'a al-bayt* is also used for the central hall or the court in a town house. See Canaan, 1933, p. 64.

⁶² See Canaan, 1933, p. 82.

protection from the westerly winds. The door served as the principal and sometimes the only source of light, and windows were added only if the living space was on a higher level than that of the door. The walls were massively constructed, at least one metre thick, using dressed stones with a mortar and rubble fill (*debesh*). Their thickness provided insulation and allowed the height of the room to be raised considerably, thereby permitting the construction of the *mastaba*. Niches in the walls were used for cupboards. The interior face of the walls was plastered. Roofing was of timber beams supporting branches or reeds covered with a thick layer of plaster or mud-mortar. These houses often huddled together, the roofs of some houses serving as terraces in front of other houses. In larger houses wooden columns were used to support the ceiling, or a wooden central beam or stone arch gave additional support and allowed an increased area to be covered. The use of groin vaulting was typical but possibly introduced after the Frankish period.

It is not clear when this distinctive type of house first developed but there is perhaps evidence for it existing in the Frankish period. The thirteenth-century text known as the so-called *Templar of Tyre* describes how a Catalan knight named Cordate who was held in captivity in a house located in a *casale* below Safed escaped from captivity by lowering himself from a window to a terrace below.⁶³ It is a brief description but provides enough detail to suggest a house that was of the Palestinian Traditional Rural House type. It was a low structure (*come maison de villain*). The window of the room where Cordate was held captive had a wooden beam across it and using the beam he lowered himself down to a terrace made of earth. The plaster or mud-mortar roofing of Palestinian village houses often contained grass seeds which would germinate in the winter, and perhaps what is referred to here as a terrace made of earth was a roof at a lower level. The house thus appears to have been of a type still to be seen today, although fast disappearing, in Palestinian villages such as Deir Samit, south of Hebron.⁶⁴

⁶³ P. Crawford (trans.), *The 'Templar of Tyre', Part III of the 'Deeds of the Cypriots*, Aldershot, 2003, pp. 54–55.

⁶⁴ See photograph on cover of Hirschfeld, 1995.

CHAPTER TWO

DOMESTIC CONSTRUCTION

In constructing their houses the Frankish builders in the East were influenced by the methods used in the West as well as by those in use in the area that had now come under Frankish rule and in neighbouring lands.

A: Architectural Style

The period of Frankish settlement in the Levant falls neatly into the two major architectural styles current in medieval Europe: Romanesque which was the predominant style in use into the middle of the twelfth century and Gothic which immediately replaced it. That the Franks in the Latin East employed these styles aids us in identifying Frankish buildings and in distinguishing them from local, non-European architecture.

As the Frankish settlements were a rather distant outpost of European culture, their buildings occasionally display features not found in the West. The broad use of the pointed arch already in Romanesque buildings is a direct example of the Muslim influence on Frankish architecture in the Latin East. The comparatively early use of rib-vaulting is another innovation. On the other hand, Frankish buildings in the East often lack features that are typical of European Romanesque and Gothic buildings.

Such matters are by their nature less apparent in domestic buildings, where in comparison to churches and castles, there is little architectural decoration. The poor state of preservation of most domestic buildings makes architectural styles still more difficult to trace. As can be seen in surviving examples of domestic buildings in France and elsewhere, decoration was usually more extensive on the upper storey *piano nobile*. Because of the turbulent history of the region, in the towns and villages of the Near East it is very uncommon to find houses of the Frankish period that have survived above the basement/ground floor level and very few house façades survive at all. Consequently, there are few examples of distinctly Romanesque or Gothic features

in domestic buildings and when these are found they are usually fragmentary. Indeed, examples of carved features, of decorative elements from vaulting or even of the vaulting itself that could be clearly defined as belonging to one or other of these styles are exceptional. In Cyprus some Gothic houses have survived, mainly of fourteenth, fifteenth and sixteenth century date, but even these are in buildings that have largely been reconstructed. These examples have been discussed by Enlart in his 1899 publication of Gothic buildings.¹

B: *Building Materials*

In many regions of the West house construction was much less substantial than in the East. Wood or wattle and daub was still predominant throughout much of Europe, even when building stone was available. Not only rural houses but even urban houses were sometimes so flimsy that in a conflagration they could be knocked down in order to form a fire-break using nothing more than a hook and rope,² and robbers would occasionally prefer to break into a house via the wall rather than through the door, the former being a less formidable barrier. Le Roy Ladurie records that in single storey houses in the village of Montaillou in the Pyrenees, “you could lift the edge of a shingle roof with your head and look in to see what was going on in the kitchen.”³ In the twelfth and thirteenth centuries stone began to play a greater role in urban construction than it had previously. In most regions other than the south it was still too expensive for peasant houses, and in cities it was used mainly in the houses of merchants and money-changers such as Moyse’s Hall, Bury St Edmunds, and Jew’s House, Lincoln in England, and in the houses of Cluny in Burgundy.⁴

Stone

This is one of the principal differences between domestic construction in the East and West. Other than the large forest around Arsur, the

¹ See Enlart, 1987.

² Lloyd, 1975, p. 20. Such a hook survives at St Benet’s in Cambridge. See Coulton, 1947, p. 310.

³ Le Roy Ladurie, p. 40.

⁴ Regarding the latter see Grandchamp et al., 1997.

Kingdom of Jerusalem probably had only few forested areas, concentrated mainly in the north. Whereas the supply of timber for construction purposes was somewhat better in the northern Crusader states, but generally poor, building stone was in no shortage. Consequently, the Franks employed stone almost exclusively in their private as in their public buildings. In any case stone was better suited to the climatic conditions of the Levant; thick stone walls retain the cool night temperatures of the summer well into the heat of the day and in the winter retain the heat generated by a hearth and by human and animal presence. In addition, in conditions where the Frankish population, both within the cities and in the countryside, faced the constant threat of attack, stone construction was preferable for reasons of security.

In the Crusader period buildings were constructed from stone quarried on the building site sometimes supplemented with better quality stone imported from different sources either for decorative or structural purposes. Some sites have building stones of more than one type or quality and these were often used in conjunction. The principal stone formation along the entire length of coast is a ridge of cross-bedded wind-laid calcareous sandstone (eolianite) locally known as *kurkar* which is formed from the Nile sands deposited along the coast. It is easily cut and weathers reasonably well and is therefore a particularly useful source of building stone. Throughout history it has been used for most of the public and private construction in coastal settlements. The inland mountain ranges such as the Carmel range, the Gilboa Mountains, the hilly regions of Samaria and Judea and the Hebron Mountains are formed of various types of limestone including the inferior Calcrete locally known as *Nari*, as well as better quality limestone and dolomite. The latter in particular has always been considered an important building stone. The hard stone locally known as *Mizzi Yahudi* is a grey to white-grey dolomitic limestone. *Mizzi Ahmar*, a red dolomitic limestone, is a very common building stone often used also for paving. These stones were generally used where they were quarried. Other quality types were occasionally transported from more distant quarries to building sites. *Meleke* for example is a pure white limestone, soft when quarried but hardening when exposed. Another useful limestone is *Deir Yasini* which is used for flagstones, for example in the Har Hozevim farmhouse.⁵ Basalt was quarried in

⁵ See below, p. 347, Fig. 95.

the north-eastern volcanic regions including the Golan Heights, the Lake Hula-Sea of Galilee Basin and the Eastern Galilee. Basalt is a hard stone, not easily cut or worked by the mason. Consequently it is often employed in the form of roughly-shaped fieldstones or rubble fill, with only limited use as ashlar for specific features such as voussoirs, lintels and quoins. Because of its colour it was also occasionally transported for decorative use in limestone construction.

In addition to local stone, Frankish builders occasionally employed imported marble and granite for use in decorative features.⁶ Marble was used for decorative elements such as capitals, columns and abaci and was also used to face walls of buildings. M. Dotan excavated a building apparently originally faced with marble in the eastern part of Acre (outside the Turkish wall) and E. Stern found a room with iron nails set in the walls, possibly to hold marble plating, above the tunnel that runs between the Templar quarter and the port.⁷ In domestic building the use of imported stone is more often as *spolia* (stones taken from the ruins of buildings from earlier periods and employed in secondary use), but for public works whole shipments of building stone could reach the Latin East. In 1286 a large amount (about 72 tons) of building stone (ashlar and corbels) was shipped to Acre by the Venetians to repair their fondaco and other buildings in their quarter.⁸ However, this was exceptional; in general it appears that the Franks made use of the local building stone for their public and private buildings, even for fine decorative architectural work.⁹

It was not generally necessary to transport stone great distances; in most cases it was quarried on the construction site itself or in a location nearby. In the village of al-Kurum, basements, the lower parts of ground floor rooms and certain features such as narrow benches

⁶ There was a professional expert to face walls with marble. Such was probably the trade of one Mathaeus Marmorar. See *RRH*, no. 1285. Information from Iris Shagrir.

⁷ M. Dotan, "Akko", *IEJ* 24 (3-4) (1974), p. 277 and personal communication, E. Stern.

⁸ Jacoby, 1979, p. 36, n. 180.

⁹ Fine works of architectural decoration such as the lintels of the Church of the Holy Sepulchre and the historiated capitals found in the Church of the Annunciation in Nazareth (Enlart, 1928, p. 310) were produced locally making use either of local stone or of *spolia* from stone imported in earlier periods (on Nazareth see Folda, 1995, p. 437). One of the lintels used to decorate the façade of the Church of the Holy Sepulchre was carved on the back of a Fatimid sculptured plaque. See Folda, 1995, Plate 7.9r.

along the walls were cut in the bedrock (Figure 4), and quarrying can be seen to have been carried out on either side of the main road. At al-Qubaiba too quarrying can be observed along the road and in the house plots, and the building of Aqua Bella was excavated into a hillside that served as its quarry.

a) *Quarrying*

Quarrymen carried out the difficult labour of cutting the stone from its source. Recent discoveries enable us to get an idea of the quarrying techniques employed by the Franks. Crusader period quarries have been found at the tower of Destroit on the sandstone ridge opposite the Templar castle of Chastiau Pelerin ('Atlit), opposite the Templar castle of Vadum Jacob in the Upper Jordan Valley where both basalt and limestone were quarried, at Tarfile (Khirbat al-Manhata) near the Teutonic castle of Montfort, at Tel es-Safi below Blanchegarde Castle and at the fortified monastery of St. Samuel at Montjoie (Nebi Samwil). At Blanchegarde and at the quarry opposite Vadum Jacob two different types of stone, bedded one above the other, facilitated the division and removal of the upper layer. At Vadum Jacob a thin surface layer of basalt was used primarily for rubble to fill between layers of ashlar in the walls and for the roughly-shaped voussoirs for the barrel vaults. The ashlar were cut from the lower level of limestone. At Blanchegarde the upper layer of hard limestone was easily separated from the softer chalk below. The quarrying technique that can be seen at these sites involved cutting V-shaped channels through the upper layer, then peeling it off the lower one using iron pegs or levers (Figure 5). A number of iron pegs were recovered in the quarry of Vadum Jacob. From the observation of these castle quarries, it appears that the stone dressers frequently carried out their work at the quarry itself even when it was rather distant from the building site.¹⁰

¹⁰ At Blanchegarde a quarried outcropping of hard limestone (*nari*) lying atop very soft chalk was discovered in a survey carried out by the author and A. Maeir in 1997 about 300 m. southwest of the castle near the base of the tell. Within the area of the quarry there are at least four worked stones with marginal drafting similar to those found in the castle. These ashlar were prepared at the quarry but were never used, perhaps because they were partly damaged.



Figure 4. Rock-cut steps and a bench in a village house in al-Kurum (photograph by author).



Figure 5. Quarry at Blanchegarde Castle (photograph by author).

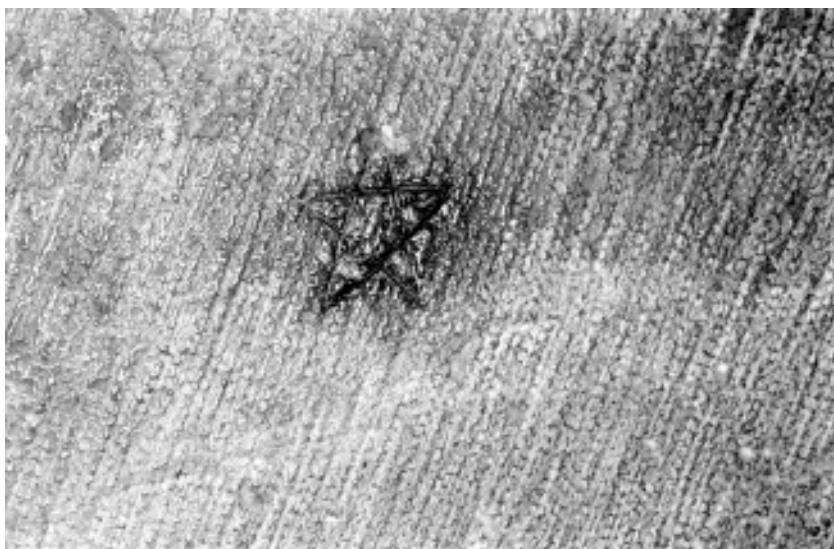


Figure 6. Frankish masons' mark (photograph by author).

b) *Dressing of Building Stone*

A variety of methods were used by the Franks in dressing building stones for domestic buildings. Possibly this variety is due to the employment of non-Frankish workmen. The usual, well-known Frankish tooling techniques are found, in particular in urban houses; diagonal tooling often appears with masons' marks (Figure 6) and occasionally with marginal dressing. In rural buildings the simple, less time consuming and cheaper technique of using roughly-shaped field-stones, with the ashlar masonry restricted to quoins (corners), doors and windows, is frequently found in village houses and in farms, towers and rural estate centres.¹¹

Wood

From historical records we are acquainted with the difficulty of finding building-quality timbers. In Jerusalem during the siege of June–July 1099 there was virtually no timber available for the construction of

¹¹ For discussions of these techniques see Clermont-Ganneau, 1899, pp. 1–47; Pringle, 1981, pp. 173–99; R. Ellenblum, 1992, pp. 168–89; Boas, 1999, pp. 219–21.

ladders and siege machines.¹² Some wood was available from forests near Nablus but this was probably a very scanty supply. Other small forests were still in existence in the Middle Ages and one very large forest was located near Arsur (the modern coastal town of Herzlia) where the Battle of Arsur took place on 7 September, 1191.¹³ These forests consisted for the most part of small trees such as Mediterranean Kermes oak (*Quercus calliprinos*) and Terebinth (*Pistacia palaestina*) or, in the lower areas, Carob (*Ceratonia siliqua*) and Lentisk (*Pistacia lentiscus*) and in the drier areas Mount Tabor's oak (*Quercus ithaburensis*) and Storax (*Styrax officinalis*).¹⁴ Groves of larger trees were probably still found in the Galilee but the best supplies of timber were from further north in the Lebanese mountain ranges where there were forests of stone pine, Aleppo pine, cedar and cypress. Timber could also have been obtained from the Troodos Mountains in central Cyprus. Probably another source was timber imported from the West. Timber had been imported to the Muslim states prior to the Crusader period and, in spite of a decree at an ecumenical council held in Montpellier in 1195 which banned the sale of timber to Muslims because of its use in weaponry and shipbuilding, there is evidence that it continued throughout the twelfth and perhaps thirteenth centuries.¹⁵ It is reasonable to assume that timber from the West would

¹² The problem was resolved by taking apart ships that had arrived at the port of Jaffa. The Crusaders negotiated with a small Genoese fleet that had been scuttled in the port in mid June. The outcome of these negotiations was that the ships were dismantled and their equipment including ropes, hammers, nails, mattocks, hatchets and most importantly timber was taken to Jerusalem, accompanied by carpenters, to be used for the construction of three siege towers. William of Tyre refers to the Genoese sailors as being skilled in the art of building in the manner of sailors and experts in felling trees, smoothing and fitting beams and erecting machines. See RA p. 147; WT 8.9.

¹³ Most of these disappeared only much later, in the period of Turkish rule by which time it is reported that "The number of resin, fruit and ornamental trees is decreasing by the year, and the surroundings of Jerusalem, Jaffa and Gaza are devoid of forests completely. See A.M. Luntz, *Eretz Israel Calendar for 1865*, vol. 10, Jerusalem, 1865 (Hebrew), p. 166.

¹⁴ One wonders how much use these trees would have been for providing timber for building purposes. According to Liphshitz and Biger, even trees that in other conditions could reach a considerable height were comparatively stunted as a result of the climate and soil composition. See N. Liphshitz and G. Biger, *Green Dress for a Country*, Jerusalem, 2004, p. 35. However, it should be noted that these forests did contain some large trees, examples of which could still be observed in remnants of the forest of Arsur half a century ago (Personal communication from B.Z. Kedar).

¹⁵ On the ban see St. Baluze, *Concilia Galliae Narbonensis*, Paris, 1668, p. 30. Amalfitan and Genoese merchants are recorded transporting timber to the Muslim

have also reached the Frankish states. It would have been, along with other items, profitable merchandise that could also serve as ballast on the voyage out.

Because of its general scarcity, wood was limited to special needs such as scaffolding and centring, and it is not surprising that we find practically no mention in the sources of timber houses. There is a single reference made by William of Tyre to a wooden house in Acre and “two of stone which were formerly reed huts”¹⁶ but there are no other such references and timber houses were certainly exceptional. It is even less surprising that we find no archaeological evidence for them.

Other than for scaffolding during construction, wood was used for roofing, window frames and shutters, door leaves, bolt beams and pivot posts. Wooden scaffolding is recorded in the medieval West in illuminated manuscripts that depict its use in the construction of castles and cathedrals. Although no wooden windows or doors survive we can see evidence for their use in the stone construction. Channels in doorposts that held wooden beam bolts and pivot holes for door beams are frequently found. There are few references to carpenters in the sources although the family name *Carpentarius* appears occasionally in documents.¹⁷ Beyond this we hardly hear of the trade.

Roofing

The use of tiled, gabled roofs appears only occasionally in the Latin East; in general the Franks favoured the Eastern style flat roof. Indeed, only in one case to date have roof tiles appeared in a published Crusader period excavation.¹⁸ This was at a farmhouse in the Jerusalem suburb of Har Hozevim, a few kilometres north of the medieval city. Here a substantial number of *tegulae* and *imbreces* were found, enough to make it clear that the main building of the farmstead was roofed with a tiled gable or half-gable. As in the Roman and Byzantine periods, the

East early in the twelfth century and Venetian ships carried timber to Alexandria at the end of the twelfth century. See Goitein, 1967, p. 46, p. 402, n. 32, p. 301, p. 475, n. 1. See also Prawer, 1972, pp. 398–99, 402.

¹⁶ WT 12,25:69–70.

¹⁷ See *RRH*, 302, 457. Information from Iris Shagrir.

¹⁸ While it seems clear that most roofing in the Kingdom of Jerusalem was flat, in Cyprus, according to a source dating to around 1600 most houses had gabled tiled roofs. See Jean Palerne, *Pérégrinations*, Lyons, 1606, p. 333, quoted in Enlart, 1987, pp. 378–79. Whether this reflects the situation in the thirteenth century is open to speculation.

tegulae (large, flat rectangular tiles with one raised flange) would be placed side by side, with the raised flanges adjacent to those of the tiles on either side. The tiles would overlap those below them to prevent seepage and for the same reason the side joinings would be covered with the *imbrices* (narrower, arched riders) to prevent water leaking between them. Lead roofing may occasionally have been used though it is recorded only in public buildings and would probably have been generally too expensive for private houses.

Floor Tiles, Baked Brick and Mosaic

The use of floor tiles became popular in the West mainly from the thirteenth century on and there is no evidence for their use in domestic buildings in the Latin East. Indeed the only archaeological record for floor tiles at present is in the thirteenth century Hospitaller church of St. John in Acre and in a fine example of a sgraffito decorated tile now on display in the National Museum of Beirut but from an unclear context, displaying a crowned lion.

In a house exposed in recent excavations to the north-east of the walled city of Acre, a room was paved with small, square bricks. This is one of the few cases where brick was found in a Frankish house. Otherwise it is limited to ovens and bathhouses, which were feudal monopolies and not usually located in private houses. Floor mosaics are also exceptional. Other than the few examples of wall mosaics found in some Frankish churches the only appearance of this material seems to be the very limited use of plain undecorated mosaic flooring in some installations.

Glass

Throughout the Middle Ages including the period of Frankish rule the manufacture of glass was carried out in workshops located in the coastal region north of Acre. This industry was traditionally one in which the Jewish population was involved and this involvement continued under Frankish rule.¹⁹ It is possible that under the Franks others also became involved in this lucrative industry including members of the Military Orders.²⁰ Glass manufacturers produced vessels for local

¹⁹ Goitein, 1967, 1967, p. 109; Adler, 1907, pp. 16, 18.

²⁰ A glass workshop was excavated adjacent to the Templar estate centre of Somelaria (es-Samariya) 6 km north of Acre. G. Davidson Weinberg, "A Glass Factory

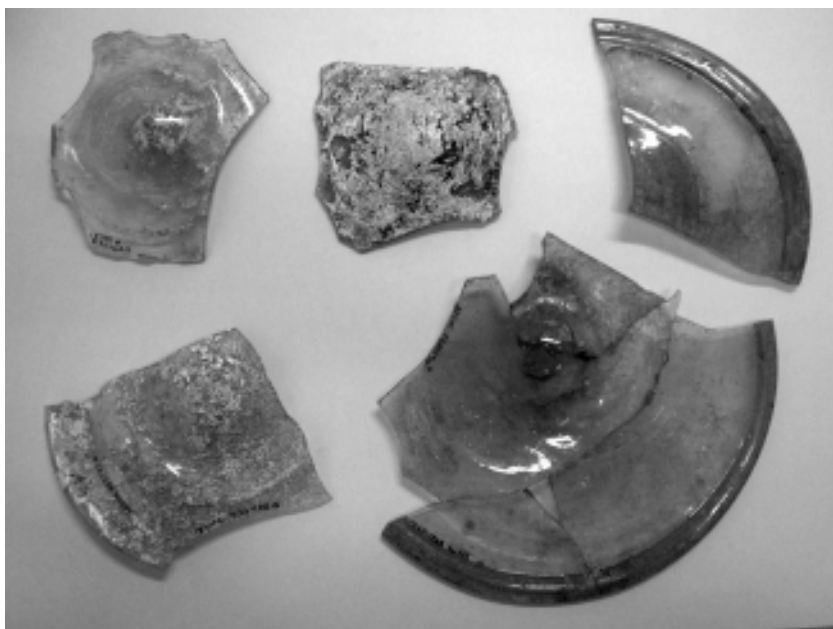


Figure 7. Round glass window plates from Baisan (Beit She'an) (photograph by author, courtesy of Jon Seligman and Yael Gorin-Rosen, IAA).

consumption as well as for export and no doubt window glass as well. There are no references to window glass finds from domestic buildings although there are occasional finds from churches and castles. However, we can assume that in a region famed for its glass industry, an industry that particularly flourished under the Franks, glass would have been in use in urban houses of better quality and possibly in more general use.

Round glass window panes ("bottle glass") made of blown glass have been found in excavations of the Frankish keep of Bessan (Beth She'an) (Figure 7). These were plates of greenish glass, quite flat except at the centre where they swell, and with a folded lip.²¹ A similar example was

of Crusader Times in Northern Israel (Preliminary Report)", *Annales du 10 Congrès de l'Association Internationale pour l'Histoire du Verre*, Madrid-Segovie, 23–28 septembre 1985, Amsterdam 1985, pp. 305–17. A possible connection with the Teutonic Order, at least as agents in the distribution of glass manufactured in the East, has been raised by Anita Engle although there is little clear-cut evidence to support this suggestion. See A. Engle, "Glass Finds at Acre throw New Light on the 'Syro-Frankish' Group", *Readings in Glass History* 13/14 (1982), pp. 35–69.

²¹ Personal communication from archaeologist J. Seligman.

found together with plaster tracery in medieval levels of the monastery of St Euthymios.²² In the Byzantine period glass windows were also made of plate glass.²³ In the West glass-blowers manufactured plate glass either by blowing a large cylinder and then cutting it open and flattening it out while still hot, or by spinning molten glass and letting it spread from a central point. The latter was called crown glass and in the West it was the most common type of flat glass. However, plate glass has yet to be recorded in Crusader period contexts except in the form of cut quarries of stained glass which have been found in castles and churches.

Mortar and Plaster (*Appendix III—Table 13, Figure 8*)

No serious study has been made of medieval mortar and plaster in the Near East.²⁴ Mortar generally consists of one part well-slaked lime to two or three parts sand, with sufficient water to make it easy to apply with a trowel; but in Frankish building the quality can vary considerably, from the exceedingly hard mortar used in the fill of castle fortification to a simple mud-mortar and stone chip mixture (*debesh*) used in many rural buildings. The profession of mortar preparation and stone-laying was known as *Cementarius*, a trade recalled in Frankish family names.²⁵

²² Y.E. Meimaris, *The Monastery of Saint Euthymios the Great at Khan el-Ahmar, in the Wilderness of Judaea: Rescue Excavations and Basic Protection Measures, 1976–1979. Preliminary Report*, Athens, 1989, p. 36, Figs. 85, 85a.

²³ See M. Peleg and R. Reich, "Byzantine City Walls of Caesarea Maritima", *Atiqot* 21 (1992), p. 115. See also Y. Hirschfeld, *The Judean Desert Monasteries in the Byzantine Period*, New Haven and London, 1992, p. 66. Plate glass from the Byzantine period was also found in a street excavated in the Mamilla area to the west of the city walls in Jerusalem. Personal communication from A. Maeir.

²⁴ The only scientific studies of medieval mortar are B.Z. Kedar and A. Kaufman, "Radiocarbon Measurements of Medieval Mortars: A Preliminary Report" *IEJ* 25 (1975), pp. 36–38 and B.Z. Kedar and W.G. Mook, "Radiocarbon Dating of Mortar from the City Wall of Ascalon" *IEJ* 28 (1978), pp. 173–76. In the first paper, having noted the use of organic material in a thirteenth century recipe for mortar recorded by a herbalist named Rufinus, this study followed up with an analysis of mortar, applying radiocarbon dating on samples taken from five sites—Arsur, 'Atlit, Belvoir, Caesarea and Castrum Beroardi. The date arrived at for the Caesarea sample is AD 1013 ± 160. The second paper gave a late Antiquity or Early Medieval date for the erection of parts of the city wall of Ascalon.

²⁵ See *RRH*, 254, 534, 535, 1194. Information from Iris Shagrir who has recently published a study of Frankish personal names in the Latin East; I. Shagrir, *Naming Patterns in the Latin Kingdom of Jerusalem*, Oxford, 2003.

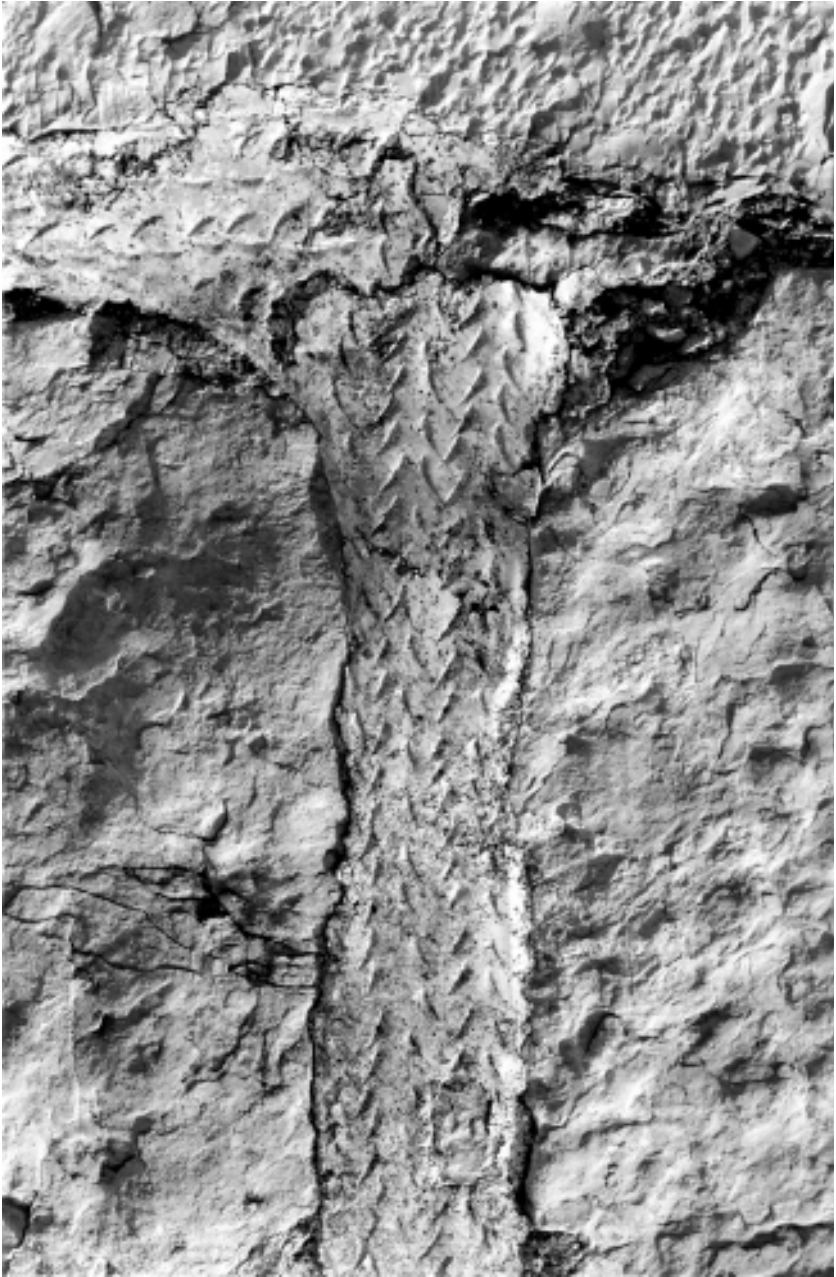


Figure 8. Mortar with herringbone tool marks (photograph by author).

Plaster was applied on most interiors and apparently on occasion on exterior walls as well. At Aqua Bella considerable traces of plaster survive in the walls facing the courtyard. Incised lines on ashlar framing windows and doors seem to have been intended to serve as markers for the plasterer to enable him to know up to which point to plaster and to thereby save work on cutting a stone to a particular shape, occasionally also to give the illusion that single stones left exposed were in fact several separate cut stones.

C: Building Technology

Skilled and unskilled labourers participated in the construction of domestic buildings; foundation diggers belonging to the latter category, masons, carpenters and plasterers to the former. The methods of construction of vaulting, walls and floors vary somewhat depending on the region and available materials and on the size of the building and the wealth of its builders.

a) Scaffolding and wall and vault construction supports

There is only limited archaeological evidence for methods of supporting structures during their construction. For the Latin East there is almost nothing in the written sources or illustrations. Putlog holes in the interior side walls of barrel vaults are evidence of the technique of wooden scaffolding generally used to shape and support vaulting under construction. Putlog holes are small rectangular hollows deliberately left along the top of the inside of side walls of a barrel vault to receive the ends of wooden beams used as temporary scaffolding in construction of the vault (Figure 9). The scaffolding or centring in these cases consisted of a series of semicircular frames built along the top of the lateral vault walls onto which the voussoirs were placed. After the completion of the vault the scaffolding was removed and the holes were generally blocked and hidden beneath plaster.

b) Foundations

Foundations of houses have rarely been examined and appear to have generally been fairly insubstantial. Houses were often built directly on the bedrock, in many cases cut into it. In the Frankish villages around Jerusalem including al-Qubaiba and al-Kurum the rock was levelled



Figure 9. Putlog holes in house in Parva Mahumaria (photograph by author).

to form the floor and sections were left to form the bases of walls (Figure 10). In those parts of the farmhouse at Har Hozevim that were not built on the bedrock the foundations were of simple rubble construction and not very deep.

c) *Wall Construction*

Walls of private dwellings fall into various categories depending on the location and quality of the construction. A number of different construction methods were employed. Occasionally in urban houses and often in rural construction, walls were composed using field-stones and stone chips with a core consisting of a rubble and mortar matrix (Figure 11) but with worked stone quoins and door and window frames. This technique, which is also common in major buildings including fortifications, may have had its origins in the West and been absorbed into Near Eastern construction following its introduction by the Franks. Examples of its use in Frankish domestic architecture can be seen in most of the rural estate centres including Aqua Bella, Jifna,



Figure 10. Rock-cut walls and features in house in al-Kurum (photograph by author).



Figure 11. Wall with rubble and mortar core at Aqua Bella
(photograph by author).



Figure 12. Unusual layered wall construction in house in Caymont (Yoqne'am) (photograph by Sandu Manda, courtesy of Mirian Avissar, IAA).

Har Hozevim and Qalonie and in Frankish street-villages such as al-Qubaiba and al-Kurum.

In a second type of wall construction the entire outer and inner facings were made of ashlar masonry with a core of rubble and mortar matrix. This more time-consuming and costly method was employed in many urban domestic buildings. A third type of construction, used on internal walls but often on external walls as well, consisted of a single layer of well-cut ashlars held together with good-quality, evenly applied mortar. This manner of construction can be seen in Jerusalem, Acre and Caesarea. In Caymont (Yoqne'am) an unusual technique can be seen consisting of a face of regular cut ashlars over an inner face consisting of mainly elongated roughly shaped stones placed upright at a slight angle (Figure 12).

d) *Façades and Loggias*

The surviving façades of houses in Jerusalem and Acre have only a minimum of decoration. In Jerusalem there are partially preserved façades on David Street, Mount Sion Street and Temple Street. These are all shop fronts with no decorative elements, except for the house

on Mount Sion Street which has simple carved corbels. Some houses in Acre show signs of having had *bacini* (glazed bowls set into the stonework), but although this is a decorative technique known in the Crusader period, the surviving examples all appear to be later in date (Figure 13). The only elaborately decorated façades of Frankish houses are located in the Kingdom of Cyprus, mainly in Nicosia and mostly of comparatively late date. These are discussed below.²⁶

The loggia was an open but covered space between the house and the street or on an upper storey. It was introduced to Tuscany and reached the Latin East with the domestic buildings of the Italian communes but may have been generally adopted by the Franks.²⁷ The new palace of the king in Jerusalem, if we can rely on the only illustration of it which is found on the Cambrai Map, appears to have had a loggia.²⁸ According to the Venetian property list, a loggia was located before the palace of the *bailli*.²⁹ It was occupied by merchants using its protection for displaying their merchandise on eight tables and benches. In the south of the city in the area that was perhaps the western part of the Pisan quarter near the church of St Andrew and the Templars' quarter is a surviving example of a loggia in Acre (Figure 14). It is on the first floor of a house with a corner tower. A loggia is referred to in a description of the Archbishop's Palace in Nicosia. It was used by the clergy of the adjacent St Sophia Cathedral to hold their sessions.³⁰

e) *Floors and Pavements*

In rural houses ground level floors were generally made by levelling bedrock or using beaten earth, sometimes a combination of the two. In some cases flagstones were laid over a level of packed earth or sand. On upper floor levels plastered floors were laid over the vault construction. In towns the floors were often made of packed clay or plaster, crushed chalk or beaten earth;³¹ coastal towns used crushed and

²⁶ See below, pp. 319–20.

²⁷ For a good example of the medieval loggia see the 14th century Davanzati Palace in Florence.

²⁸ See comment below, p. 73.

²⁹ Prawer, 1980, p. 233; Berggötz, p. 173.

³⁰ Mas Latrie. Hist, no. 65.

³¹ For example at Yoqne'am see Ben-Tor et al., 1996, pp. 20, 28, at Arsur see I. Roll and O. Tal, *Apollonia-Arsuf. Final Report of the Excavations*, vol. 1, *The Persian and Hellenistic Periods*, Tel Aviv, 1999, p. 41.



Figure 13. Evidence of bacini over windows in house in Acre (photograph by author).



Figure 14. Loggia in house in Acre (photograph by author).

packed sandstone (*kurkar*).³² Cut stone was also employed in paving. In many places these were pieces taken from earlier ruins located in the vicinity. In some cases, Caesarea for example, marble and mosaic *spolia* were used in private housing.

In palaces original imported stone was occasionally used. Wilbrand of Oldenburg describing the Ibelin Palace in Beirut wrote:

Its pavement is made of marble, which imitates water moved by a light breeze. And this is done so subtly that whoever treads on it feels as if he were wading, marvelling at not leaving any impression on the depicted sand.³³

Cobble paving is used in courtyards and can be seen in houses in Arsuf and Caesarea, dressed limestone slabs in Caesarea and Caymont.³⁴

³² For example see A. Tatcher, "Akko, the School for Maritime Officers", *ESI* 19 (2000), p. 14.

³³ Wilbrand of Oldenburg V, p. 204. Translation in Prawer, 1972, p. 452.

³⁴ See M. Avissar, *Tel Yoqne'am Excavations on the Acropolis*, IAA Reports 25, Jerusalem 2005, p. 24; A. Boas, "Survey of Crusader Structures in Caesarea", *ESI* 17 (1996), p. 77.



Figure 15. Covered street in Famagusta (photograph by author).

f) *Arches*

Shallow-pointed drop arches are most typical in Frankish building although rounded arches are also found. Occasionally both types are found in the same building. Arches were used as well for doors, windows, cupboards and arrow slit embrasures. Transverse arches were constructed as structural supports for vaults; in private buildings they were often not bonded to the wall and functioned mainly as supports during construction.³⁵ Arches were occasionally used to bear the weight of walls supporting flat roofs, as for example in the covered streets of Caesarea and Famagusta (Figure 15).³⁶

g) *Vaults*

In their houses the Franks employed barrel vaults, groin vaults and rib-vaults. The barrel vault has been described as "... a continuous arch resting on the side walls of a building".³⁷ Although it was a heavy type

³⁵ In the so-called "Knights' Halls" in the Hospitaller compound in Acre some of the arches have fallen away causing no apparent damage to the vaults.

³⁶ Boas, 1999, pls. 2.12, 2.13.

³⁷ Mitchell and Mitchell, 1908, p. 292.

of construction requiring massive side walls for support, it was comparatively easy to build. However, it had certain disadvantages. In the first place, because of its necessarily massive construction, raising a barrel vault was comparatively time consuming and required a large amount of both manpower and building material including scaffolding. Secondly, the need for massive side walls to carry the thrust from the ceiling and the weight of any superstructure limited the number of windows that could be opened in it. Although there was no great problem with the end walls these were short and did not permit the entry of much light if the vault was of any great length.

A groin vault is formed by two intersecting barrel vaults. In groin vaulting the weight of the structure is carried down to the corners of the bay; consequently it does not require massive side walls but merely corner piers for support. As many adjoining bays as are desired can be supported by this means. As the superstructure is often fairly substantial, the piers supporting the bays still need to be quite massive. In the West ribs were being added to groin vaults by the late eleventh century, and in the Latin East this probably occurred near the middle of the twelfth century, shortly before the introduction of the Gothic style.³⁸ Adding ribs may have been partly a matter of aesthetics and partly a structural requirement. The latter was certainly the case in the West where they provided stabilization.³⁹ They were bonded to the webbing and supported its weight. However in the Latin East, ribs frequently appear not to have been integrated into the webbing but simply attached to it; in examples where they have fallen away (as in the above-mentioned case of transverse arches in barrel vaulting in Acre) the vault has remained standing, whereas in the West the webbing usually collapses with the ribs. This suggests that in the East, although during construction these ribs provided support until the mortar had set, they afterwards became entirely superfluous and that Frankish ribbed, groin vaults were fundamentally a continuation of local practices in the construction of groin vaults “onto which the

³⁸ In monumental architecture it can be seen in the vaulting of the Romanesque choir and transept of the Church of the Holy Sepulchre which was completed by 1149.

³⁹ See R. Ousterhout, “The French Connection? Construction of Vaults and Cultural Identity in Crusader Architecture”, in D.H. Weiss and L. Mahoney (eds.), *France and the Holy Land. Frankish Culture at the End of the Crusades*, Baltimore and London, 2004, p. 79.

signature elements of French Gothic style have been superimposed" in the form of attached ribs.⁴⁰

Vault construction in most Frankish architecture, certainly in domestic constructions, is rarely of the high quality found in Roman vaulting or in many Islamic vaulted buildings. Whereas, for example, the latter are constructed of well-formed and fitted ashlar, in Frankish vaults it is more typical to find quite rough brick-size stones, chips and mortar matrix. This was a much cheaper and less time consuming method of construction which in any case would be hidden from view behind a thick layer of plaster.

h) *External Roofing*

It is generally assumed that the Franks adopted the Eastern flat roof. Although few domestic buildings survive to roof level this was probably true in most cases. A description in *One Thousand and One Nights* describes a Frankish woman and a Muslim merchant going up to the flat roof of a house in Acre that overlooked the sea.⁴¹ Gabled roofs were exceptional and limited to a few major buildings. The German pilgrim, Theoderich, referred to the high pitched roof of the new Templar palace as being "...contrary to the customs of that country."⁴² However there may have been some exceptions. As noted above, the excavations at Har Hozevim uncovered roof tiles, which points to the likelihood of building having had a gabled or sloping roof.⁴³

i) *Staircases*

Staircases were in many cases constructed of stone but there were also staircases of wood. Evidence for these is generally either negative evidence, i.e. there is no existing way to reach an upper storey which could mean that a ladder or wooden stairs were used, or there are rectangular holes in appropriate locations on walls which were intended for beams that would have been part of the staircase support. Stone-built

⁴⁰ Ibid., pp. 84–85, 90. Ousterhout concludes from this that the continuity in constructional practices is a result of the employing of indigenous work force (p. 91).

⁴¹ *The Book of the Thousand Nights and a Night*, trans. R.F. Burton, vol. 7, London, 1847, p. 101.

⁴² *Theodericus*, p. 165.

⁴³ See N. May, "A Crusader Farmhouse at Har Hotzvim, North of Jerusalem," *Qadmoniot* 33. 1,119 (2000) (Hebrew), p. 44.

staircases were often carried on half arches (Figure 16). Where walls were thick enough to allow it, staircases were occasionally built within the thickness of a wall. This technique, which is found often in castle towers and occasionally in churches and monastic buildings, meant less loss of usable space within the enclosed area. No examples have come to light of domestic spiral staircases although these are found in some castles, for example in tower K at Crac des Chevaliers and there was one in the Templars' house in Jaffa.⁴⁴ There is a spiral staircase in Kolossi but it dates to the fifteenth century. Prawer notes the sharing of staircases by more than one building in Acre, a feature that he notes is found in merchant palaces in Italy.⁴⁵

j) *Windows and Doors*

Windows were an important source of light and fresh air (Figure 17). They had either rounded or slightly pointed arches or a flat lintel occasionally decorated with carving and of marble or basalt. Finer Gothic buildings could have quite elaborate windows, but hardly any examples survive and those that do are quite late. In Nicosia a few Gothic windows survive preserved in largely rebuilt houses. These often have a projecting carved hood mould, sometimes with a finial at the apex, and jambs with colonnettes and foliated capitals. Some of these large windows would apparently have had elaborate tracery.⁴⁶ An oriel window was located in the palace of the Templars in Acre; but most windows were certainly less elaborate than this. Double windows in domestic buildings may have been a Frankish introduction. Relieving arches were sometimes used to protect a lintel. Lintels constructed of separate voussoirs occasionally employed Muslim decorative techniques such as joggling or *ablaq* (Figure 18). Double windows, occasionally enclosed with a hood or drip arch are also found. These may have been a Frankish introduction and occur frequently in Ottoman domestic architecture.

If not glazed, windows may have had iron bars, wooden shutters, oiled paper or parchment, or cloth coverings to keep out the dust,

⁴⁴ P. Deschamps, *Le Crac des Chevaliers, Les Châteaux des Croisés en Terre Sainte*, Album, Paris 1934, pl. CIX. On Jaffa see H. Nicholson, *The Chronicle of the Third Crusade. The Itinerarium Peregrinorum et Gesta Regis Ricardi*, Aldershot, 1997, p. 356.

⁴⁵ Prawer, 1980, p. 235.

⁴⁶ Enlart, 1987, pp. 400–402, Figs. 347–48.



Figure 16. Staircase in house in Acre (photograph by author).



Figure 17. Large window in merchant's house in Caesarea
(photograph by author).



Figure 18. Use of ablaq decoration on arch in house in Acre (photograph by author).

cold and wind. Probably in many cases windows had wooden shutters instead of glass or oiled leather or cloth. Jacques de Vitry refers to opening windows, which could apply to either glazed or shuttered but perhaps more likely the latter.⁴⁷ Count Henry of Champagne while looking out of a window in Acre fell to his death in 1197 when the railings gave way. He had several times ordered the railings on this window repaired.⁴⁸ In the palace bedchamber occupied by Louis IX while he was in Acre there was an embrasure window with bars.⁴⁹ In times of danger windows were weak points and needed to be defended. In one of the houses adjacent to the eastern city wall of Caesarea and in a house excavated in the town of Arsur windows were found blocked with stones; this probably occurred at the time of the Mamluk sieges of these towns in 1265 (Figure 19).

⁴⁷ Jacques de Vitry, *Epistolae* p. 113.

⁴⁸ P. Edbury, *The Conquest of Jerusalem and the Third Crusade, The Old French Continuation of William of Tyre*, Aldershot/Brookfield, Vermont, 1998, 183, p. 143.

⁴⁹ John of Joinville, *The Life of Saint Louis* (in Joinville and Villehardouin, *Chronicles of the Crusades*), trans. M.R.B. Shaw, New York, p. 271.



Figure 19. Blocked window in house in Caesarea (photograph by author).

Doorframes were often but not always arched, sometimes with drip-moulding. If they had monolithic lintels there was sometimes a relieving arch. Generally doors opened internally and were secured by means of a locking mechanism and a beam bolt fitted into a channel in the doorpost that could be drawn across at night or in times of danger. Threshold stones with post holes are often found with curved or straight channels against the step sloping into the axel hole (Figure 20). These channels were necessary in order to insert the axel post which was greater than the height of the door. Doors of private dwellings were sometimes double-leaved but more often single-leaved. In no cases do the actual doors survive; however, doorposts and threshold stones give us an idea of the nature of the locking mechanisms. Excavations have produced no keys although keys appear frequently as motifs on glazed bowls with sgraffito decoration from Cyprus (Figure 21) and as masons' marks.⁵⁰ A metal keyhole can be seen on a Frankish illustration from Acre.⁵¹

⁵⁰ See for example Johns (2), Plate 53, Fig. 2:6.

⁵¹ This is in Brussels Bibl. Roy., MS. 18295, *Histoire Universelle*. See J. Folda, *Crusader Manuscript Illumination at Saint-Jean d'Acre, 1275–1291*, Princeton, N.J., 1976, Plate 254.



Figure 20. Monolithic threshold stone in Caesarea (photograph by author).



Figure 21. Cyprriot lead-glazed bowl with sgraffito design showing key.

k) *Cisterns and Drainage*

The Franks quickly came to understand the importance of an internal water supply in their castles and applied this lesson to all of their domestic buildings. Well-constructed cisterns are found in every Frankish settlement and often in every house. Cisterns supplied the most reliable source of water. Most houses had cisterns in their courtyards or within the house itself. The typical arrangement was a barrel-vaulted cistern with an adjacent sump shaft or settling tank into which water from the roofs and courtyards was collected via pipes and channels. The dust and dirt settled at the bottom of the shaft or tank and clean water flowed via a pipe at a higher level into the cistern so that only clean water collected in it. Such cisterns can be seen in towns—among them Acre and Caesarea—and in many rural sites. In the stables at Chastiau Pelerin (‘Atlit) the pipes leading down from the roof passed via a covered stone butt that had a sump plug and fed the cistern through a plastered stone channel covered with flat stones.⁵²

D: *Building Tools, Equipment and Machinery*

Two tombstones from the cemetery at Chastiau Pelerin (‘Atlit), apparently burials of masons, are decorated with illustrations of their tools of trade. On one is a hammer and square and on the other a square and plummet.⁵³ Actual building tools have been found at a few Frankish sites, mainly from castles—notably a large collection from the building site at Vadum Jacob that includes spades, hoes, axes, picks, chisels and trowels, and some tools from Chastiau Pelerin (‘Atlit) including a spade, an axe, a chisel and a hammer.⁵⁴ Other objects used in construction include iron hooks, bronze and iron nails up to 25 cm long and small tacks.⁵⁵ There is no reason to suppose that these would differ in any way from tools used in domestic building.

⁵² Johns, 1997 (2), p. 119, Fig. 13.

⁵³ See Johns, 1997 (1), pp. 92–94, Fig. 37. For a photograph of one of these see A.J. Boas, “The Frankish Period: A Unique Medieval Society Emerges”, *Near Eastern Archaeology* 61:3 (1998), cover illustration.

⁵⁴ See Boas 1999, p. 163, Fig. 6.2; Johns 1997, (6), pp. 48–51, Figs. 15, 16.

⁵⁵ Ibid., p. 48, Fig. 15; I. Khamis (in Ben-Tor et al., 1996), photo 18.9:5, 7. It is interesting to note that in 1240 nails of Beirut were being used in Egypt. As Beirut at the time was still under Frankish rule this signifies either commerce in these objects between Egypt and the Kingdom of Jerusalem or alternatively that the name *mismār*

Of machinery we know little but it can be assumed that in the construction of large buildings the manually powered crane with a windlass and radiating spokes was probably in use. In Europe the treadmill (*magna rota*) was used in the thirteenth and fourteenth centuries in mechanical cranes, having, after a long hiatus, reappeared in the early thirteenth century, somewhat later in England.⁵⁶ It may have been in use in the Frankish East and a thirteenth century illustration of a treadmill crane can be seen in a locally produced illuminated manuscript.⁵⁷

E: *Decoration*

Somewhat more difficult to discern than Frankish construction techniques are the effects of the Frankish occupation on the decoration of domestic buildings. These buildings are less likely to display decorative elements of the Romanesque and Gothic styles than are monumental buildings and in most cases they are also less well-preserved. Cyprus, in particular Nicosia, provides the best preserved Frankish houses but these underwent much damage following the Turkish occupation in the sixteenth century. In the words of O. Dapper (1702):

...one of the principal occupations of the Turks since they became masters of the city is to pull all the palaces and beautiful houses to pieces in the hope of finding some hidden treasure or at least of selling the stones and other material for use in some other buildings.⁵⁸

Nonetheless, and in spite of the comments of Enlart regarding the reconstruction of many of the original Gothic doorways and the difficulty caused by the construction of Gothic-type doors until comparatively recent times, there are still a few fine examples, and the degree of preservation, including at least part of the original upper storey has no comparison on the mainland. Most surviving decoration is found on the external walls. However, the interiors must originally also have

beyrūtī was used to denote a particular type of nail. See M. Gil, "The Qodesh in Fustat", *JESHO* 14 (1971), pp. 167–68.

⁵⁶ A. Matthies, "Medieval Treadwheels. Artists' Views of Building Construction", *Technology and Culture*, vol. 33.3, 1992, pp. 510–47.

⁵⁷ See Buchthal, 1957, Plate 84c (*Histoire Universelle*).

⁵⁸ O. Dapper, *Description exacte des isles de l'Archipel et de quelques autres adjacentes dont les principales sont: Chypre, Rhodes, etc.* (1677), trans. from Flemish, Amsterdam, 1704. English trans. by David Hunt in 1987.

been much decorated. Wilbrand of Oldenburg compared the ornamentation and painting of houses in Nicosia with that found in the houses in Antioch.⁵⁹

The Use of Frescoes

If the art of fresco painting in Crusader churches is limited to a few remarkable fragments, most notably the recently restored frescoes in the church at Abu Ghosh (Emmaus), in domestic buildings it is almost non-existent. Frescoes were probably not uncommon in the palaces and better houses, but we are left today only with the description by Wilbrand of Oldenburg of wall painting in the palace of the Ibelins' in Beirut:

The ceiling is so appropriately painted in the selfsame colour of the air that you seem to distinguish the floating clouds, here a zephyr breeze, there the sun, the year, the months, days, and weeks, hours and minutes moving in the zodiac...⁶⁰

Architectural Sculpture

In a similar fashion very little evidence survives for carved decoration in Frankish houses although no doubt sculptured elements were used in private dwellings. Most of the few surviving examples appear to be in secondary use. As noted, Cyprus is the only source of sculptured façades on Frankish houses in the East. Enlart published a number of houses in Nicosia and Famagusta that are decorated with carved elements in their façades. The palace of the archbishops of Cyprus was built in Nicosia by Eustorgius of Montaigu (1217–50) and underwent certain modifications in 1313 and perhaps later. The carriage gateway on the east was formed of a simple pointed arch but displays above it

⁵⁹ Wilbrand of Oldenburg, p. 121.

⁶⁰ Ibid. 5, p. 204. Translation from Prawer, 1972, p. 452. This was perhaps no less elaborate than Western counterparts such as the decoration, quite possibly in fresco, in the bedchamber of the Countess Adela of Blois described in the earlier poem of Baudri, abbot of St-Pierre de Bourgueil, later archbishop of Dol (1046–1130) as having the sky with its constellations depicted on the ceiling. See Baudri of Bourgueil, *Carmina*, ed., K. Hilbert, *Baudricus Burgulianus, Carmina*, [Editiones Heidelbergenses, 19] Heidelberg, 1979, no. 134, pp. 149–85. On references to other decoration in the countess's bedchamber see B.Z. Kedar, "Reflections on maps, Crusading, and logistics" in J.H. Pryor (ed.) *Logistics of Warfare in the Age of the Crusades. Proceedings of a Workshop held at the Centre for Medieval Studies, University of Sydney, 30 September to 4 October 2002*, Aldershot, 2006, pp. 177–81.



Figure 22. Carved marble lintel in house in Genoese quarter, Acre (photograph by author).

a stone carved with a heraldic emblem of two escutcheons; the one to the right is charged with a cross hastate and patté, the other one with two fleurs-de-lis separated by a saltire running from the dexter angle to the point. A second piece had been subsequently inserted during a repair to the wall at a higher point to the left and another on the first-storey level.⁶¹ On an adjacent wing the angle of a buttress displays a torus moulding that Enlart notes was usual in Late Gothic Cyprus.

In the Kingdom of Jerusalem very simple Frankish carvings of heads and fish, now in secondary use, are located in a house (Kesten's building 52) that utilizes part of the remains of a covered street in the Genoese quarter of Acre.⁶² In house 1:8 in the Genoese quarter is a simple carved marble window lintel (Figure 22).

⁶¹ Enlart, 1987, pp. 399–400.

⁶² Kedar and Stern, 1995, pp. 105–11, Figs. 9–12. Some of these have disappeared since this publication.

Simple Stone-Cutting, Joggling and Use of Stone of Various Colours

Amongst the simple stone decorative techniques occasionally employed by the ranks is the use of step-joggled voussoirs. Joggling or inter-locked voussoirs appear in pre-Frankish building, in Roman Spain and France and in the third century Golden Gate of Diocletian's palace at Spalato. In Islamic architecture they appear first in the Umayyad desert palace, Qasr el-Heir East and in the doorway of the Bāb al-Futūh in Cairo (built 1087). This technique became very common in the Mamluk period, when it was often combined effectively with the technique of *ablaq* (the alternate use of stones of various colours) which also appears to have been occasionally adopted by the Franks.⁶³ In a house in the Genoese quarter of Acre (house 1:8) joggled voussoirs were used in the arch of a doorway leading from the courtyard into an apartment on the west. In house 1:6 there is an arch, possibly part of an internal loggia, that was constructed employing the alternate use of white and buff-coloured limestone voussoirs. These are fairly simple applications. In the better houses decoration would have been more. When referring to the Palace of the Ibelins in Beirut Wilbrand of Oldenburg wrote: "The walls are entirely covered by marble slabs in which ingenious work wrought various vases."⁶⁴

⁶³ See below, p. 274, n. 16.

⁶⁴ Translation from Prawer, 1972, p. 452.

CHAPTER THREE

DOMESTIC DESIGNS

A number of different designs were employed by the Franks in their urban and rural houses. The choice of house design was no doubt influenced by the ethnic origins of its builders but also by the nature of the settlement in which the house was built and the particular requirements that developed as a result of new social roles taken on by the settlers. In the cities the courtyard design, the predominant layout of houses in the Near East, appears to have been favoured. However, in Acre, where the greatest number of houses has survived, several other designs are found in use. These include large communal houses, towers and small, elongated-plan merchant houses. In the smaller towns courtyard houses of a less regular layout appear to predominate, while in rural settlements the courtyard design was commonly used for rural administrative centres and farms. In some of the Frankish villages, notably in the street-villages around Jerusalem, the Western “burgage plot” design is typical.

A: Urban Housing

Not surprisingly, a greater variety of house design is found in the larger Frankish towns than in the rural settlements. The number of different house types is essentially a consequence of the history, character and location of the town. For example, in towns such as Jerusalem or Caesarea, where at the time of conquest the population was considerably depleted but comparatively little damage had been done to the infrastructure, there would, at least initially, have been little need for new domestic construction; the Frankish settlers would simply have occupied the numerous abandoned houses.¹ One can assume that in such cases, once there was a need for the construction of a new house, its design would largely follow that of the pre-conquest houses that the settlers had occupied and grown used to. On the other hand in towns

¹ WT 8.20.

where, either because many houses were damaged at the time of occupation or there were simply not enough houses for the new settlers to occupy, or in cases where the settlers required a specific type of house to suit the requirements of their particular lifestyle, new designs were often based on the houses known in the new population's place of origin. In Acre, for example, where there was a large influx of Italian merchants from Venice, Genoa and Pisa, new types of house designs were introduced that had their source in the domestic buildings of the mother cities and were designed to fulfil the requirements of an itinerant merchant population.

Most of our knowledge of urban house design comes from Acre where there are a large number of complete and partial surviving houses and where archaeological excavations are continually uncovering new examples. The unique and complex social makeup of this city—with its population of local Christian and non-Christian settlers, Franks from various European countries and a large contingent of Italian merchants—makes it the single most important source for a study of Frankish urban housing. Other urban sites where examples of Frankish houses survive include Jaffa, Arsur (modern Herzliya), Caymont (Yoqne'am), Jerusalem, Nicosia and Famagusta.²

Perhaps more so in the maritime cities than in the inland towns, including Jerusalem, crowding became a problem as the growing commercial activities brought about substantial increases in their population. This is certainly the case in Acre which, because of its pivotal new role in commerce between the East and West, became so crowded that probably by the middle of the twelfth century it was already expanding beyond its existing walls. This overcrowding increased even more after 1191, when the loss of the inland towns brought about a considerable additional swelling of the population. It was probably equally true of Tyre. Crowding in the cities resulted in the use of every available space within the walls.³ The need for more dwellings resulted in the

² Caymont has been regarded here and below as an urban site although its status in the later part of the period under discussion still requires clarification. Certainly in the early years it was not an urban settlement and it was never referred to as such in the documents. However there may be a case for regarding it as a town in the later period by which time it may have possessed town walls.

³ Open areas on the outskirts of the town within the walls were, it seems, an exception. These areas appear to have been intentionally retained as open spaces. This was a common feature of medieval walled towns, where peripheral areas were allocated for markets, market gardening, and certain industries and activities that cannot be con-

construction of multi-storey buildings. Sources indicate that many of the domestic buildings in Acre were, like the public buildings, of three or even four storeys.⁴ In addition, open courtyards and public spaces were increasingly utilised. An example can be seen in house 1:8 in the Genoese quarter of Acre where, over a period of time, the large courtyard was gradually vaulted over, section by section, and converted into living space. A similar process is recorded in other cities in the Near East, for example in Cairo where “courtyards became reduced and roofed and lateral *iwans* became mere recesses”.⁵ This was also the case in the larger European cities.⁶

Types of Urban Domestic Buildings

Frankish domestic buildings range from the palaces and grand residences of the noble class and wealthy merchants to communal merchant houses to simple residences, which in most towns formed the majority of private dwellings, and hovels.

Palaces (Royal, Church, Military Orders, Communes, others)

A discussion of domestic buildings can include the palaces constructed in the cities chiefly to serve as luxurious residences of royalty and nobility although they often served additional administrative functions. Royal palaces were located in Jerusalem and Acre and in Cyprus at Nicosia. There were also palaces of the princes of Antioch and Edessa, but of these we are unfortunately completely uninformed. Little is known of the palaces of the important feudal lords in other towns of the Crusader states,⁷ but we are better informed regarding the palaces of the Military Orders at Jerusalem, Acre, Tyre and Tortosa. In

veniently placed in the built-up areas. The same situation existed in Jerusalem, which retained its open peripheral areas until the twentieth century and, to some extent, even until today. Fourteenth century maps of Acre show a number of open areas adjacent to the walls. See below, p. 201.

⁴ See Prawer, 1980, p. 236.

⁵ Behrens-Abouseif, 1989, p. 35.

⁶ James E. Vance describes this process in the West where, as a common response to crowding in medieval cities, structures were enlarged by adding on what were often jerry-built extensions. Houses filled the entire burgage plot, and extensions encroached on the street in the form of bay windows, lean-tos and the common overhanging extensions of upper stories—even forming a bridge across the street. Vance, 1977, p. 136.

⁷ Wilbrand of Oldenburg’s description of a luxurious palace in Beirut may be one such baronial palace. See Laurent, pp. 166–67, translation in Boase, 1967, p. 65. See

the port cities of Acre and Tyre were palaces belonging to the Italian merchant communes.

a) The Royal Palace in Jerusalem

The first royal palace in Jerusalem was probably located in the Tower of David which was occupied by Raymond of Toulouse in 1099 but was subsequently turned over to Godfrey of Bouillon and in 1100 was received by Baldwin I when he arrived in Jerusalem to assume the crown. In 1104 Baldwin decided to move to what may have seemed a more appropriate location and to make use of one of the most prominent monuments in the city, the eighth century al-Aqsa Mosque, known by the Franks as the *Templum Salomonis* and identified with Solomon's palace. Although its location on the southern side of the Temple Mount dominating much of the city was appropriate for a royal palace, this building was far from ideal as a residence. It had been built and had served as a place of religious worship, and would have been inappropriate to serve as a residence; too large and difficult to heat in the cold winter months. In addition it appears to have been in a rather dilapidated state when Baldwin moved in; parts of the eastern wing were possibly incomplete and the roof was in disrepair. Indeed it appears to have declined in condition during the years it was used as a royal palace, although it is probably during this period that a chapel was constructed and no doubt the necessary apartments (kitchens, latrines, etc.) were set up to enable its use as a residence. However, by the middle of the century it was no longer used by the kings of Jerusalem. It must have been in the late 1130s or 1140s that they handed over the entire palace to the Templars, who then went ahead and rebuilt parts of the mosque and constructed many other buildings around it. At this stage the royal court possibly moved into what may all along have been considered a temporary residence near the Church of the Holy Sepulchre, adjacent to the Rotunda. On the twelfth century Uppsala Map of Jerusalem a royal hall (*Aula Regis*) is shown just to the east of the church. Although nothing can be learnt from this schematic and uninformative illustration it seems possible that a royal residence was indeed located hereabouts, given that a fifteenth century pilgrimage *itinerarium* refers to a royal residence to the south of the Rotunda. According to the account of Felix Fabri (bearing

also Jean Richard's short paper on Oldenburg's description of this palace, J. Richard, "Un palais à Beyrouth au début du XIII^e siècle", *Res Orientales* 8 (1996), pp. 139–41.

in mind that it was written 236 years after the final fall of Frankish Jerusalem in 1244) a residence that once served the kings of Jerusalem was located on the south-west side of the Rotunda. Fabri describes a great house with many rooms, in the main hall of which was a window looking onto the Holy Sepulchre. Part of this residence including the chamber looking onto the Holy Sepulchre can still be seen today in the buildings occupied by the Greek Orthodox Patriarchate.

Towards the end of the reign of Baldwin III (1143–63) or during that of Amaury (1163–74) the royal residence moved once again—this time to an entirely new building constructed specifically to serve as the palace of the kings of Jerusalem. This new palace was built on the site of the Herodian palace, although it is not known whether the Frankish king was aware of this fact.⁸ Almost no trace of this palace has survived and it is hardly mentioned in contemporary sources. One of the few references is by Theoderich who refers to the newly built solar chamber and palace.⁹ This reference is important as it indicates that the palace was built before his visit, which took place in 1169, but probably after that of John of Würzburg (1160), who makes no mention of it. The well-known twelfth century map of Jerusalem known as the Cambrai Map illustrates the palace in the appropriate location adjacent to the Tower of David with the caption “*curia regis*”. The rendering of the palace shows some interesting details which might be open to interpretation; but it is unclear how reliable the illustration is because this map includes examples of both comparatively realistic representations such as of the recently completed Church of the Holy Sepulchre and the Hospitaller quarter to its south but also some highly imaginary renderings such as one of the Dome of the Rock that has little in common with the actual structure.

Keeping this in mind, the drawing represents a complex with two towers, an outer fortified wall and a palace with a gabled, porticoed solar.¹⁰ Archaeological traces of the palace are negligible. Two or possibly three excavations have uncovered what may have been parts of

⁸ By the Middle Ages little if any remains of the Herodian palace would have survived.

⁹ Theodericus 4, p. 146.

¹⁰ See Ellenblum's attempt at interpreting the illustration of the royal palace on the Cambrai Map in R. Ellenblum, “Frankish Castles, Muslim Castles, and the Medieval Citadel of Jerusalem”, in I. Shagrir, R. Ellenblum and J. Riley-Smith, eds., *In Laudem Hierosolymitani. Studies in Crusades and Medieval Culture in Honour of Benjamin Z. Kedar*, Aldershot, 2007, pp. 107–8.

this royal palace. In 1971 excavations in the Armenian Garden adjacent to the western city wall uncovered remains that were identified by the archaeologists as part of the ground floor of the southern wing of the palace. These consisted of two barrel-vaulted halls, 17 m. long, built over rock-cut cisterns in one of which was a patriarchal cross moulded in plaster. The building contained installations, possibly for the storage of wine.¹¹ Excavations in the courtyard of the Qishle (the police compound just south-east of the citadel) in 1988/89, exposed groin-vaulted rooms constructed with typically Frankish marginally-drafted masonry, a plastered floor and part of the façade decorated with engaged pillars.¹²

As this was clearly a substantial building and probably one of the landmarks of the city, the question arises—when was it destroyed? Four possible dates come to mind—October 1187 when Saladin occupied the city, 1219 when al-Mu’azzam ‘Isa destroyed parts of the city’s defences, 1239 when once again parts of the city’s defences including the adjacent citadel were dismantled by al-Naser al-Daud of Kerak and 1244 when the Khawarizmian hordes overran the city. We can rule out two of these dates, 1187 and 1219, because in 1229 when Frederick II arrived in Jerusalem he handed over the palace to the Teutonic Knights.¹³ Possibly the remark in the Rothelin Continuation of William of Tyre that in 1239 al-Naser al-Daud had the citadel razed to the ground actually refers to the palace.¹⁴ That would explain its near complete disappearance whereas considerable portions of the citadel survive.

b) The Royal Palace in Acre

From 12 July 1191 Acre replaced Jerusalem as the principal seat of government of the Kingdom of Jerusalem, and from that time on the royal court probably occupied the citadel on the old north city wall to the east of the Hospitaller compound. Just as the Cambrai Map of Jerusalem pinpoints and illustrates the royal palace and labels it with the words “*curia regis*” the royal palace is clearly located on all versions

¹¹ D. Bahat and M. Broshi, “Excavations in the Armenian Garden”, in Y. Yadin (ed.), *Jerusalem Revealed. Archaeology in the Holy City, 1968–1974*, Jerusalem, 1975, pp. 55–56.

¹² D. Bahat, “Jerusalem”, *NEAEHL*, vol. 2, Jerusalem, 1993, p. 797.

¹³ *Chronique d’Ernoul et de Bernard le Trésorier*, ed., M.L. De Mas Latrie, Paris, 1871, p. 465. See also Boas, 2001, pp. 82, 225–26, n. 21.

¹⁴ Shirley, p. 40.

of the thirteenth and fourteenth century maps of Acre. The maps of Pietro Vesconte and Paolino Veneto, which date to the early fourteenth century, show the citadel of Acre illustrated and clearly labelled “*castellum*”.¹⁵ The thirteenth century map of Matthew Paris is more explicit, labelling the castle “*le chastel le rei de Acre*”.¹⁶ This would normally have served as the residence of the king’s constable or castellan, being used by the king only on his occasional presence in the city; but after the fall of Jerusalem and the recovery of Acre in 1191 it may well have served as the principal royal residence in the kingdom—perhaps even after the recovery of the Holy City in 1229 if, as stated, Frederick II gave the palace in Jerusalem to the Teutonic Knights.

c) The Royal Palace in Nicosia

The Royal Palace of the Lusignans in Nicosia was situated on the lower market beside the Paphos Gate. Wilbrand of Oldenburg referred to it in 1211 but unfortunately did not describe it.¹⁷ It had an open loggia overlooking the square. The Great Hall built by Hugh IV in the fourteenth century was a luxurious structure constructed over a vaulted basement, surrounded by arcades supported on colonnettes and approached via an exterior gallery and stone staircase. It adjoined the king’s room or was possibly reached via a wardrobe through a trapdoor.¹⁸ Enlart cites the fifteenth century Cypriot chronicler Leontios Machaeras, who records that the palace predated the Lusignans and consequently the Gothic style in Cyprus. However, it was much enlarged and embellished by them, particularly in the fourteenth century under the reign of Hugh IV (1324–59). It was partly or completely demolished in 1567. Today fragments of the palace restored by the Cypriot Department of Antiquities are preserved in the *Kasteliotissa*.

d) The Royal Palace in Famagusta

The royal palace in Famagusta apparently existed as early as 1300, in which year there is a reference to the “*logia domini regis*”.¹⁹ Of this palace which stood opposite the Cathedral of St. Nicholas in the centre of the city, little remains. It had already been largely rebuilt by

¹⁵ See Dichter, 1973, pp. 17–30.

¹⁶ Ibid. on, pp. 9–16 (14).

¹⁷ Wilbrand of Oldenburg, p. 181.

¹⁸ Enlart, 1987, pp. 392–93.

¹⁹ Ibid., p. 463, n. 72.

the Venetians when it was badly damaged by bombardment during the 75-day Turkish siege of 1571. Under the Turks, although used as a *konak* (official residence), it was largely neglected. Enlart described three surviving fragments including a guardroom at the entrance and part of a basement room used as a stable and a chapel and, by his time, as a prison cell.²⁰ The palace was constructed with arched arcades around a large quadrilateral parade ground. Fragments of the arched Gothic southern façade could be seen behind the elaborate Venetian façade. There was a broad, semi-circular arched entrance with a wide hood-mould. Enlart describes the dilapidated ground floor of the south wing, divided lengthways into ten bays that had small elongated embrasure windows with chamfered external edges. It was divided into two aisles by octagonal pillars devoid of capitals and had pointed arches.²¹ The west wing has five bays forming a single room; at a later stage, according to Enlart, these were vaulted, each with a barrel vault to the west facing the street and a groin vault to the east on the side of the courtyard.²² South of them was a room of two bays and to its south a three-bayed room. At the northern end of the west wing parallel to the street was a small chapel, according to Enlart the only original part of the wing. It measures 16.5 by 6 m. and consists of a nave of two barrel-vaulted bays. A part of the north wing also survived. In this wing were the palace latrines. The Great Hall where Peter II was crowned in 1371 must have occupied the area at the end of the courtyard where the Venetians constructed a Renaissance style building. All that remains today of the palace is the shell of the western portion, a large L-shaped building of the early sixteenth century and the façade of three arches, between them four columns apparently spolia from Salamis. Over the central arch is the coat of arms of Giovanni Renier, the Venetian Captain of Cyprus in 1552.

e) The Archbishop's Palace in Nicosia

The thirteenth century archbishop's palace in Nicosia was originally built by Eustorgius of Montaigu. It underwent considerable modifications in the late thirteenth and fourteenth centuries. A reference in the cartulary of St. Sophia (no. LXV) mentions a loggia where the cathedral clergy held their sessions. A fifteenth century source mentions a

²⁰ Ibid., p. 465.

²¹ Ibid., p. 466 and Figs. 389, 390.

²² Ibid.

watchtower manned by six watchmen.²³ It seems to have been partly fortified in the fifteenth century. Fragments of the medieval palace survive incorporated in a series of private houses. These include a carriage gateway facing the transept of St Sophia.²⁴

f) The Bishop's Palace in Famagusta

The bishop's palace in Famagusta probably dates to c. 1400 and it was out of use and falling into ruin by 1491.²⁵ It was a narrow structure located north of the Cathedral of St Nicholas and adjacent to the main shopping street to its north. Its layout can no longer be traced because it has been largely rebuilt, but Enlart hazarded an attempt to at least outline the surviving features. The bishop's apartments must have been on the ruined east end, where it adjoined the treasury of the cathedral. Only the central part of the palace is recognisable. Seven shops with pointed barrel vaults open onto the street. According to Enlart the bishop could not have the usual cloister because of the position of the palace; nonetheless he gained by this in that he had on his property a row of shops on the main street from which he could command high rents.²⁶ The bishop's gardens occupied a rectangular space beyond the apse of the cathedral, and to the west of his residence was a pavilion that extended beyond the alignment of the cathedral, closing the parvis of the church with a second wing that faced the synodal chamber. This pavilion overlooked the main square and the royal palace.

g) The Hospitaller Palace at Acre

In 1135 the Hospitallers moved their headquarters in Acre from its original location adjacent to the cathedral of the Holy Cross to its final position by the northern (old) city wall near the Porta St. Johannis. This complex has undergone intensive excavation since 1990 which has revealed a number of major twelfth and thirteenth century buildings. Amongst these is one that was labelled as the *palais du grand*

²³ Ibid., 399; F. Bustron, *Historia overa commentarii de Cipro*, Paris, 1886, pp. 378–79.

²⁴ This gateway has above it a stone carved with two escutcheons which Enlart describes; the one on the right bears a cross hastate and patté, the one on the left with two fleurs-de-lis separated by a saltire running from the dexter angle to the point. Enlart, 1987, p. 399.

²⁵ Ibid., p. 461.

²⁶ Ibid., p. 460.

maître on a seventeenth century panorama.²⁷ To judge from its size and location it would indeed appear to be the palace, the largest building in the Hospitaller compound. A mere 12 years after its appearance on the panorama, this building appears largely destroyed on an illustration by Cornelius Le Bruyn dated 1698 that shows the façade of the groin-vaulted ground floor, the monumental staircase and remnants of the upper storeys viewed from the west. This building was exposed by archaeologists on the eastern side of the courtyard. It was constructed of well-cut sandstone (*kurkar*) ashlar and consists of four groin-vaulted aisles divided by 15 freestanding constructed piers. It covers an area of 1,107 square m. and the vaults are c. 6.5 m. high. The only information we have regarding the upper stories is from the drawing by Le Bruyn, and this is not easily interpreted.²⁸ If the large mass of masonry on the right-hand side of the drawing is to be understood as being remains of the southern wall, then this palace stood to at least four storeys (including the ground floor). So little had survived by the late seventeenth century that we can hardly even speculate as to the appearance of these levels. The first floor would no doubt have contained a large ceremonial hall; but all that can be seen is a doorway or window somewhat above ground level giving access to the area to the south that is above what is usually identified as the kitchen. Above, on the fragment of wall, is some sort of blind-arch construction of the upper floor.

h) The Templar Palace at Acre

Apparently the greatest single edifice in the city was the Palace of the Templars. We have no information on its interior; but medieval and post-medieval written sources and one drawing of the palace published in 1752 that shows the ruins as they stood four years earlier throw some light on its external appearance. A written account by the Templar of Tyre records the palace at the time of the Mamluk conquest of Acre in 1291:

The greater part of the people, men and women and children, more than ten thousand persons, sought refuge within the Temple [compound],

²⁷ This panorama of 1686 prepared during a French reconnaissance mission to the East in 1685–87, shows the city viewed from the south. The remains of the Hospitaller compound can clearly be seen in the western part of the city. It includes the ruined palace of the Hospitaller Grand Master and the Church of St. John, both clearly labelled, and a third monumental ruin, possibly the Hospital, to their south-east.

²⁸ Le Bruyn, 1698, p. 307.

for it was the strongest place in the city. It occupied a large site on the sea, like a castle; it had at its entry a tall, strong tower, and the wall was thick, twenty-eight feet wide. On each corner of the tower was a turret, and upon each turret was a gilded lion *passant*, as big as a donkey, which cost—the four lions and the gold and the labour together—fifteen hundred saracenate bezants, and it was a most magnificent thing to see.²⁹

There are a number of illustrations of this palace on contemporary maps but they are clearly not intended to represent the actual appearance of the building and hardly differ from other palaces illustrated on these maps. The only illustration in which we can observe any attempt at representing how the palace actually appeared is an eighteenth century drawing of the ruined building that, although it attempts to give a realistic rendering, is rather primitive and probably does the palace little justice. It shows what appears to be a group of buildings with great round arched portals, a loggia and a church with pointed-arch windows and an oriel window.

i) Administrative Palaces of the Italian Commune in Acre

Archaeological remains of the Venetian, Genoese and Pisan palaces in Acre are not known at present; our information on them is limited to brief references in texts. The Venetian palace appears on the maps of Acre by Paolino Veneto with a large flag flying above it. The Pisan palace also appears on these maps³⁰ Neither of these drawings can be considered reliable. The most detailed information is a description of the palace of the *bailli* in the Venetian property lists of 1243–44.³¹ Standing in the northern part of the Venetian quarter, it was a two- or three-storey building fronted by a loggia where eight benches or tables were placed to display merchandise. It had six large shops on the ground floor and various apartments on the upper levels.

j) Communal Apartment Buildings (*palazzi*) in Acre and Tyre

A prominent type of urban house design in Acre and Tyre, one that is recorded in contemporary documents and appears in the archaeological record, is a multi-storey communal apartment house intended

²⁹ P. Crawford, ed., *The 'Templar of Tyre', Part III of the 'Deeds of the Cypriots'*, Aldershot, 2003.

³⁰ See Dichter, 1973, pp. 18–26.

³¹ Berggötz, pp. 172–73; Prawer 1980, p. 233.

for merchants and referred to in documents as a palace (*palazzo*).³² Although such buildings certainly existed in Tyre and possibly in other towns as well, archaeological evidence for them is at present limited to Acre. Remains of the ground-floor level of several such buildings can still be seen. One of the best-preserved examples of this type of building is located on a street traversing the Genoese quarter from north to south (house 1:5). It has three arched entrances (now blocked) on its western side, which once gave access from the narrow covered street into the ground-floor vaults. The presence of three large adjacent entrances suggests that they served as shop entrances and that this level of the building—which consisted of nine groin-vaulted bays supported on six massive piers—served as a warehouse for merchandise. The entire ground floor covered an area of 382.5 square m. and was approximately 6 m. high, constituting a considerable space for storage of goods and for retailing activities, and as such appropriate for the use of merchants of the commune. The massive construction of the walls, with piers over a metre square in section, suggests that the ground-floor level supported a building several storeys high.³³

This type of communal merchant residence is recorded in two surviving property lists of the Italian communes that date to the middle of the thirteenth century. The first of these is an inventory of Venetian possessions in Acre and Tyre drawn up by the Venetian *bailli* Marsiglio Zorzi in 1243 and 1244.³⁴ The second is a similar list drawn up by the Genoese consuls, Guilielmo de Bulgaro and Simone Malocello in 1249.³⁵

The Venetian property list identifies several buildings in Acre as palaces.³⁶ These buildings are described as having shops, apartments

³² In the sixteenth century, but no doubt reflecting earlier periods, the use of the term *palazzo* was reserved for the ducal palace; large merchant houses were more modestly termed *domus* or *casa* (*ca'*) for short.

³³ The likelihood that these were buildings of several stories is illustrated by the fact that the ground-floor remains of several of these buildings served for the basements of large palatial residences constructed in the nineteenth century.

³⁴ This list was published by G.L. Tafel and G.M. Thomas, *Urkunden zur Älteren Handels- und Staatsgeschichte der Republik Venedig*, (Vienna, 1856–57) and more recently by Berggötz, 1991.

³⁵ Desimoni. See also Kool, 1997. These lists are an invaluable source of information in that they give us an insight into the components of the houses floor by floor as well as providing valuable data on purchase and rental costs.

³⁶ Berggötz, pp. 172–78.

and warehouses on the ground floor and apartments or single rooms on the upper floors. The shops and apartments were either sold or rented out for a season to visiting merchants.³⁷ Some of these buildings are described as being fronted by courtyards with cisterns, and there is a reference to a loggia where tables or benches were placed for displaying merchandise as well as, in one case, a reference to defensive towers. Describing one of the largest of these palaces, the Great Palace of the Fondaco, Zorzi refers to 16 shops and 12 small rooms on the ground-floor and basement levels.³⁸ An external staircase gave access to the upper floors. On the second floor there were eleven rooms and on the third floor, eight small rooms and two large ones. On this level there may have been internal divisions; four of the small, low rental rooms had no windows.³⁹ Adjacent to this palace and sharing its staircase was another large palace, four storeys high and with ten apartments. Another large palace described by Zorzi was the palace of the Bailli already described.⁴⁰ The source refers to additional palaces of two or more storeys. The Genoese property list mentions a number of palaces in the quarter but is less detailed than Zorzi and gives no information about the internal divisions of these buildings.

k) Private Palaces

In 1158 Pope Hadrian IV confirmed to the abbey of St. Mary Latin the grant of a palace (*palatium*) located next to St. Stephen's Gate in Jerusalem.⁴¹ Nothing is known of this building but we might expect that it was a palace in the usual sense, i.e. the luxurious residence of a wealthy noble, rather than a communal residence of the sort just described.

³⁷ A "season" refers to the period between two *passagia*, that is, between the short periods in spring and autumn when winds and currents enable comparatively safe sea passage.

³⁸ Ibid., pp. 174–75.

³⁹ This however could be due to the fact that there were external towers on the upper level of this palace.

⁴⁰ Above, p. 79.

⁴¹ Rudolf Hiestand, *Papsturkunden für Kirchen im Heiligen Lande*, Göttingen, 1985, p. 2189, no. 79.

Tower Keeps

a) The Hospitaller Commandery at Kolossi (Le Colos)

Although reconstructed in the fifteenth century, the keep at Kolossi can be seen as representative (albeit a luxurious example) of the type of domestic apartments found in Frankish fortified buildings. The fief of Kolossi was granted to the Hospitallers by Hugh I in September 1210.⁴² After the fall of Acre in 1291 the castle was designated to replace the Hospitaller headquarters there; consequently the same budget that had funded the upkeep of that large compound was now assigned to Kolossi.⁴³ The Commandery would no doubt already have become a major building. The existing castle is a fifteenth century reconstruction necessitated by the destruction wrought by the Genoese invasions of 1373 and 1402 as well as later Muslim invasions. It is on a larger scale than most of the keeps built on the mainland in the twelfth and thirteenth centuries and its well-preserved domestic quarters throw light on how the interior of some of the better examples of those keeps may have appeared. It is a three-storey building with a basement divided into three pointed barrel vaults with north-south alignment, each measuring 12.5 by 3.5 m., two east-west barrel vaults on the first floor, each 6 m. wide and 13.5 m. long; and two north-south barrel vaults on the second floor. Of the three storeys, the ground floor would have served for storage, the first floor for service rooms including a kitchen and the second floor as the residence of the Grand Commander. A wooden mezzanine floor provided a storage area on the second floor and the roof served as a fighting platform.

The keep, well constructed of medium-sized ashlar, measures 21 by 29 m. and is preserved almost intact up to its crenellated roof. A spiral staircase built in the south-east corner leads to the upper storeys and the roof. West of the staircase a conduit carried rainwater from the roof to cisterns under the basement. The basement had openings for air and light just below the vaults and a pointed-arch door on the south side (1.2 m. wide and 1.65 m. high) as well as a door on each of the dividing walls (1.2 m. wide and 2 m. high) at its south end. The dividing walls are 90 cm. thick. The first floor had a door

⁴² S. Paoli, *Codice diplomatico del sacro militare ordine Gerosolimitano*, Lucca, 1773–1777, vol. 1, p. 101.

⁴³ Mas Latrie, Count L. de, *Histoire de l'île de Chypre sous le règne des princes de la maison de Lusignan*, vol. 2, Paris, 1852; republished Famagusta, 1970, p. 91.

immediately above the external door of the basement. It was reached by a staircase—now with an arch that allows access to the basement door below but originally with a drawbridge—and above these doors is a *machicoulis*. On the dividing wall between the two vaults are two doors. On each wall of the first floor are two, almost square embrasure windows with low arches and a window bench on the interior. In the eastern room is a large wall painting depicting the Crucifixion with the Virgin Mary and St. John. The coat of arms of the Grand Commander is visible at the base of the painting. In the western room on the first floor, on the external (west) wall, and in both rooms on the second floor, on the dividing wall between them, are large wall fireplaces (one is 1.5 m. long, 1.6 m. high and 90 cm. deep; the other 1.4 m. long, 1.5 m. wide and 60 cm. deep) decorated with carved designs, that of the north room on the first floor has plaited convex meanders and on the entablature is a foliated scroll. On each side is an escutcheon framed by a fillet bearing a *fleur-de-lis*, the coat of arms of the Grand Commander, Louis de Magnac. Similar devices appear on the more simply decorated fireplace in the south room. The depth of the fireplace in the south chamber of the first floor (1 m.) suggests that it may have been used as the kitchen. A small brattice on the north side of the first floor served as a latrine and another is on the floor above it.

Houses around a Shared Courtyard

A typical arrangement of domestic buildings found in Acre and elsewhere is of groups of houses, two or more, including both large and small houses, gathered around a single courtyard. A good example of such an arrangement can be seen in the Genoese quarter (house 1:17).⁴⁴ Here a fairly small rectangular courtyard was surrounded by at least three separate houses that have access to it. One of these is a large ground-floor hall of the palace type described above. The courtyard was accessed from the main thoroughfare via a narrow passage bending at a right angle before entering. On a smaller scale is a group of single-room houses surrounding an open area (courtyard?) in Jaffa. These structures measured 7 by 15 m. and were constructed of field-stone without bonding.⁴⁵

⁴⁴ See below, Appendix II.

⁴⁵ See M. Peilstöcker, "Yafa", *ESI* 20 (2000), p. 48.

Merchant Houses with Shops

In Jerusalem there are remains of a few houses with ground-floor shops and apartments above. Clearance work carried out in the 1970s on the Street of Mount Zion, exposed a section of a merchant house located just south of the junction with David Street, with three adjacent shops on the ground-floor level but somewhat above the present (and medieval) street level (0.83 m.) (Figure 23).⁴⁶ These shops were found blocked but intact with the façade surviving to a height of 4 m. (11 stone courses). They front narrow barrel vaults, 2 m. wide and 7 m. long, between what would have been their main opening onto the Street of Mount Zion and back doors onto the parallel Street of Judas' Arch to its east. It is possible that this may be a house that is described in a document dating to 1143.⁴⁷ The three main doors of this building facing the Street of Mount Zion have openings 1.95 m. wide and 1.88 m. high. They have lintels formed of five voussoirs each, which are arched at the top and flat at the base, stepped from halfway up the central voussoir sloping down to the base at either side, thereby forming two low arches with a flat base and pointed ends.⁴⁸ The base of the voussoirs and the doorjambs are chamfered. At the meeting-point between the lintels and the doorjambs are small brackets with double half-round moulding. At 1.2 m. above each arch is a small rectangular opening the height of one stone course. It was formed by leaving a small open space between two stones and was apparently intended for ventilation and to give light to the interior. The stonework of the façade is constructed with fine diagonally-tooled freestone and there are a number of masons' marks of triangular, asterisk and spiral shape. Some diagonal tooling can also be seen on the façade of the Street of

⁴⁶ See N. Avigad, *Discovering Jerusalem*, Nashville TN, 1983, p. 248, Fig. 292.

⁴⁷ Bresc-Bautier, p. 165, no. 68. See D. Pringle, "Crusader Jerusalem", *BALAS* 10 (1990-91), p. 110. If this text indeed refers to the house in question, this building appears to have housed possessions of two different Military Orders. The house described had a bakery above which were the vaults of the Hospitallers' exchange and above these there were apartments. On the façade facing the Street of Judas' Arch there is (now plastered over) what was probably a Templar insignia, an ownership mark carved in the form of an inverted T within a triangular shield designating Templar ownership or owing rent to the Templars.

⁴⁸ This unusual design is found occasionally in Frankish architecture, as for example, in the church at Dair al-Asad where it appears as a relieving arch over a solid stone lintel. See Pringle, 1993, Plate 47.



Figure 23. Façade of house with shops in Jerusalem (photograph by author).

Judas' Arch.⁴⁹ On this side four springers of arches, one on either side of each door, show that this section of the street was originally vaulted with groin vaulting.

On Temple Street is a partially preserved merchant house with shops (originally at least three). Now incorporated in the turba of Barka Khān⁵⁰ which contains the tombs of Barka Khān and his son, Badr al-Dīn, it was converted in 1900 into a library of some 12,000 books and manuscripts.⁵¹ The Frankish remains consist of a façade of three pointed arches that had once stood open but were at some time blocked. Burgoyne notes that the springers of the arches are set back 10–15 cm. from the jambs of the piers and he suggests that the ledge thus formed may have supported a beam spanning the archway.⁵² He suggests that a square groove and sockets seen in the intrados on the original masonry of the western arch could have held timber boarding in the tympanum, allowing the shop opening to be closed with rectangular doors. Each of these arches originally opened onto a separate chamber (shop) of which virtually nothing survives but which were, to judge from the comparatively thin remains of the partitions between the shops, more likely to have been groin-vaulted than barrel-vaulted, as are those on the southern side of the Hospitaller compound. A narrow window (with a small relieving arch above it) was built into the western side of the façade. Circular shields with the letter T in the lower half (as in the *Orbis-Terrarum* maps) are found around head height on the façades, indicating their Frankish origin. As they are similar to the triangular lapidary shields containing inverted Ts found elsewhere in the city—such as the example mentioned above on the Street of Judas' Arch and another on the porch of the Bāb as-Silsila as well as at the Templar castles of Sidon and Beaufort (at the latter as a masons' mark) and on a jetton from Templar Chastiau Pelerin ('Atlit)—they probably signify Templar ownership.⁵³ An alternative suggestion is that as these shields are not triangular but are similar in form to incised and carved

⁴⁹ The upper part of the façade on this side has been reconstructed and the northern door has been blocked and replaced with a narrower door and a window, probably when this vault was converted into a small mosque.

⁵⁰ Barka Khān was a thirteenth century Khāwarizmian chief who died in 1246. His daughter subsequently married Baybars.

⁵¹ Burgoyne, 1987, pp. 110–11.

⁵² Ibid. p. 111.

⁵³ Ibid., pp. 111, 115–16. A similar masons' mark was, however, recently recorded at Teutonic Montfort.



Figure 24. Merchant's house in Caesarea (photograph by author).

symbols found near Montfort Castle and also within Castellum Regis, both Teutonic properties in the western Galilee, they may have been placed on the building in the thirteenth century (in or after 1229) by the Teutonic Order who were present in Jerusalem and received possessions in the city from Frederick II. Burgoyne noted six of these symbols, four of them around the small window.⁵⁴ The masonry has been reworked so that almost nothing can be seen of its original tooling although diagonal tooling can still be seen on the easternmost pier and on the keystone of the western arch.

In the northern part of Caesarea, within the medieval town walls is a building that in the past was identified as a church but that Pringle suggests may have been the house of a wealthy merchant (Figure 24).⁵⁵ Most of the ground level survives, and remnants of the first floor are preserved above the thick side walls. The entire structure was constructed

⁵⁴ I was able to make out only three of these. A similar shield is found in the Armenian quarter near the Church of St. Thomas.

⁵⁵ Pringle, 1993, p. 183.

of *kurkar* ashlar. The ground floor consists of a large barrel vault, 7.5 m. wide and originally probably well over 20 m. long, supported by at least three transverse arches with chamfered arrises, two of which can be seen springing from badly weathered decorated brackets. These arches were not bonded onto the stonework of the vaults. The side (north and south) walls are c. 1.75 m. thick; that to the west is only 50 cm. The main doorway was to the west, no doubt facing the street. There are pointed-arch embrasure windows in the walls of the second bay from the east and there were doors in the north and south walls of the third bay; the ground floor would thus have had ample light. A vertical shaft in the south wall may have opened onto the cistern to which there is a narrow opening slightly south of the wall and the two blind arches in the north wall were possibly intended to relieve the weight of the wall over another underground cavity. Pringle notes that one of the arches has a rectangular vertical shaft in its soffit, possibly for the discharge of a garderobe chute. These elements suggest that there were domestic apartments on the upper floor, which was reached by an external staircase with an arched support. Traces of these apartments survive above the two east-west walls, including the remains of an internal dividing wall. Pringle's suggestion that this was a wealthy merchant's house seems a sound one. The ground floor could have served as a storage room (*cantina*) for the merchant's goods and as a shop from which he sold them while he occupied the apartment above.

Tower Houses in Acre

In Acre and Tyre the Italian merchants introduced a type of urban domestic building that is almost an icon of the Italian city—the tower house.⁵⁶ From the eleventh century, possibly even earlier, tower houses became an increasingly common form of defensive housing in Italian cities. Their presence reflects the rise of a new urban elite and a growing rivalry among the affluent merchant families who were competing with increasing aggression for control over the booming commerce and industry and had few qualms over resorting to violence against one another.

Tower houses in the Latin East are recorded in the property lists of Venice and Genoa. One such tower in Acre is described as being three

⁵⁶ On Italian tower houses see D. Pringle, "A Group of Medieval Towers in Tuscany", *PBSR* 42 (1974), pp. 179–223.

floors high with rooms for rent on the upper storeys; a room on the highest floor was rented for 14 bezants per month during the caravan season and one on the second floor for 7 bezants per month. A vaulted room beneath the tower served as a prison.⁵⁷

Domestic Apartments in Urban Monasteries

Hundreds of churches were built in the cities to replace those that had fallen into ruin or had been destroyed by the Fatimid caliph al-Hākīm in the early eleventh century.⁵⁸ Together with many of these churches new and revived monastic houses were established. In Jerusalem these included the Augustinian houses of the Church of the Holy Sepulchre, St. Mary of Mount Zion, the Church of Ascension and the Templum Domini (Dome of the Rock), the Benedictine houses of St. Anne, St. Mary in the Valley of Jehoshaphat, St. Mary Latin and St. Mary Major, and possibly a Dominican house and a Franciscan house (both, if they existed founded after 1229 and no longer of known location). A number of Orthodox and other houses were also established at this time.⁵⁹

Although Acre lacked pilgrimage sites it became one of the most important cities for pilgrims, being the port through which virtually all pilgrims passed in the twelfth and thirteenth centuries. Here pilgrims rested and recuperated after their long and often difficult journey, changed their money and bought the necessary supplies before setting off for Jerusalem. The monasteries together with the houses of the Military Orders would have provided some of these pilgrims with lodging. Several of the monasteries in thirteenth century Acre were established after the Third Crusade, some having formerly been located in cities that were now under Muslim rule and others being entirely new establishments.

Tyre had few monastic houses, amongst these that of the Franciscans⁶⁰ who also had a house in Jaffa founded by King Louis IX of France. A reference to this house by William of St. Pathus (hagiographer to the king and confessor to Queen Margaret) in his *Life of St Louis* mentions that the king provided it with, among other items “beds and

⁵⁷ Berggötz, p. 177.

⁵⁸ Pringle notes that more than 400 churches were built, rebuilt or in use in the two centuries of Frankish rule. See Pringle, 1993, p. 1.

⁵⁹ For a detailed list of religious houses see Pringle, 2007, pp. 5–6.

⁶⁰ Chehab, 1979, p. 525.

other hospital provisions".⁶¹ Alongside and to the north of the rebuilt Crusader Church of the Annunciation in Nazareth was a courtyard building, possibly the bishop's house, and to the south a larger complex with buildings of at least two storeys, probably the conventual buildings of the canons. Although all that remains of these is part of the ground-floor level of the east wing, it can be assumed that this compound included the usual monastic elements including the chapter house, refectory and dormitory.⁶² A community of Augustinian monks was established in the Church of the Nativity in Bethlehem shortly after its occupation in 1099. New monastic structures were erected around the church including a residence for the bishop and possibly a pilgrims' hospice or hospital.⁶³ The convent was located to the north of the church and had the usual arrangement of a rectangular cloister with a refectory occupying the entire north side, a chapter house and sacristies on the ground-floor level of the east range and, no doubt, the brothers' dormitory above. The restored portico of the cloister has five piers on either side and, between each pair, four sets of double columns with finely carved Romanesque capitals. The dormitory was probably located on the upper floor of the eastern wing of the cloister.⁶⁴

B: *Rural Housing*

Our knowledge of Frankish rural housing was for a long time limited to the examples excavated by Bagatti in the village of al-Qubaiba (Emmaus) in the early 1940s and to a largely unpublished group of isolated Frankish buildings occasionally referred to in the past as manor houses but perhaps better designated as rural estate centres, few of which have been excavated.⁶⁵ Since the 1980s the situation has improved, the result of excavations of villages, farms and estate centres, some new discoveries and some important studies of Frankish rural settlement, notably the works of Pringle and Ellenblum.⁶⁶

⁶¹ Delaborde, pp. 46–47.

⁶² P.M. Viaud, *Nazareth et ses deux églises de l'Annonciation et de Saint-Joseph d'après les fouilles récentes*, Paris, 1910, Fig. 2; B. Bagatti, *Gli scavi di Nazaret*, vol. 2, Dal secolo XII ad oggi. *Studium Biblicum Franciscanum coll. Mag.*, vol. 17.ii, Jerusalem 1984, pp. 71–72, Fig. 29, Plates. 24–25; Pringle, 1998, pp. 138–39, Fig. 32.

⁶³ Pringle, 1993, p. 138.

⁶⁴ *Ibid.*, p. 150.

⁶⁵ Bagatti, 1993.

⁶⁶ Pringle, 1983, 1985, 1992; Ellenblum, 1996, 1998; Ellenblum et al., 1996.



Figure 25. Street village at al-Kurum (Ramot 06), Jerusalem (photograph by author).

Villages

Archaeological research has so far distinguished two types of Frankish villages in the Kingdom of Jerusalem; the planned street-villages such as Parva Mahumaria (al-Qubaiba), al-Kurum (Figure 25), Magna Mahumaria (al-Bira), al-Haramiya and unplanned villages of a more typical Middle Eastern layout such as the village at Mi'iliya (Castellum Regis). The layout of individual houses in these villages varies. That of houses in the planned villages is an elongated design whereas the layout of those in the unplanned villages is often of the courtyard type, a design more typical of houses in the Near East. The elongated design of the planned villages correlates with the orderly nature of these villages and the relationship of the house to the single village street. This is the so-called "street-village", a European design not limited to rural contexts but also found in towns and aimed among other things at giving a maximum number of houses direct access to the street. It underwent various changes in its application in the East, notably in the type of construction techniques used and the occupation by the house of the entire area of the plot (*toft*), but it remains true to its origins in general terms.

Houses in Planned Street-Villages

The introduction of the street-village into the Latin East is a remarkable phenomenon and one that signifies a noteworthy change (albeit a short-lived one) in conditions of security for the Frankish population within the region. The establishment of what were in essence defenceless or almost defenceless settlements by the Franks can only have meant that the security situation in the hinterland of the kingdom had improved to the extent that the Muslim marauders were no longer considered as a serious threat. These settlements must have first appeared shortly after the fall of Ascalon in 1153, perhaps even earlier, when the Franks managed to neutralize many of the Fatimid raids by building castles in strategic locations from which Muslim raiding parties could be observed and prevented from advancing.

The houses in these villages follow a standard design with minor variations in layout and size. A typical house stretched back from the street on a long, narrow plot (Figure 26). Construction was simple with fieldstone walls and barrel vaults. Few ashlar were employed. Floors were cut or levelled in the bedrock or formed of packed plaster. Windows do not generally appear on the ground floor but probably



Figure 26. Street village house in Wadi Haramiya (courtesy of Yehiel Zelinger).

existed at the first-floor level. The houses occupied the entire *toft* and shared side walls and sometimes street walls with the neighbouring houses. Most of the houses were probably of two storeys and some also had undercrofts (Figures 27, 28). The ground floor was often divided by an internal wall, with the street-facing front room being twice the length of the back room. These rooms served for various domestic purposes such as cooking and storage; on occasion they contained cisterns, cupboards, fireplaces, benches, olive mills and wine presses.

Farm Houses (curtilia)

The numerous isolated rural buildings scattered throughout Frankish territory in the Kingdom of Jerusalem would appear in most cases to

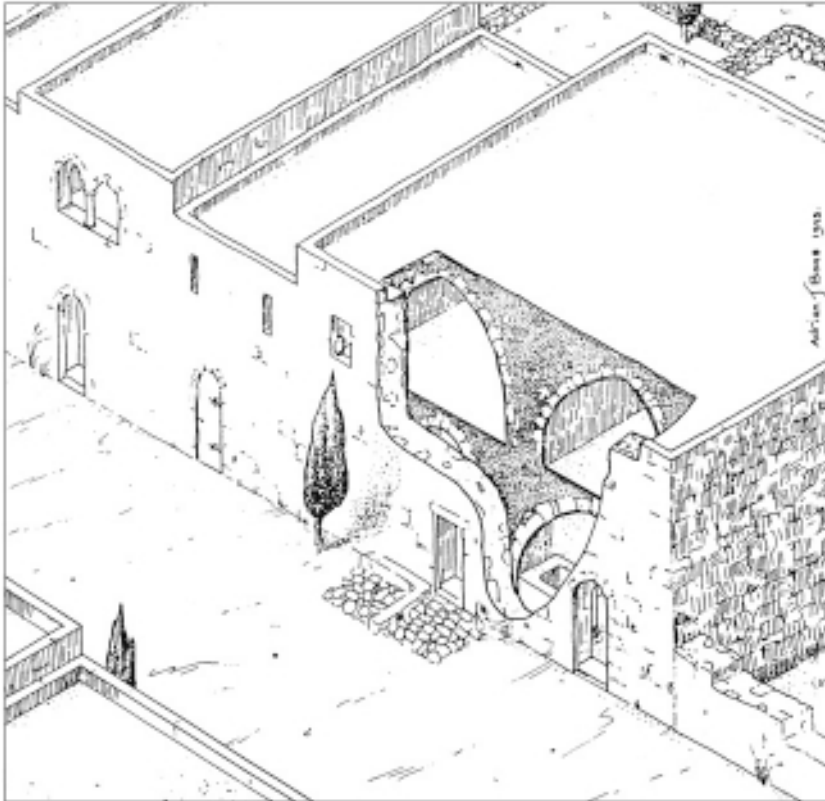


Figure 27. Reconstruction of village houses in Parva Mahumaria (al-Qubaiba) (drawing by author).



Figure 28. House with undercroft in street village at al-Kurum (photograph by author).

have been intended to fulfil administrative purposes and are by and large discussed here under the rubric of rural estate centres. However, Frankish documents frequently refer to the farmhouse (*curtile*), and a small number of the surviving buildings can be clearly seen upon examination to have been intended to function as farmhouses.

What was probably a fairly typical example of a Frankish farmstead was discovered and excavated in the Jerusalem suburb of Har Hozevim north-west of the city. It consisted of a large, well-built two-storey hall-house with additional small vaults and a number of minor structures including a chicken coop and pens for livestock, as well as a walled courtyard to the east and a second courtyard to the north.⁶⁷ The hall-house, described in detail below, was a two-storey structure with storage and work-space on the ground floor and, no doubt, living quarters on the upper floor. Two small anterooms on either side of the door of the hall-house were, like the other outbuildings, later additions to the original structure. These were barrel-vaulted and opened opposite each other towards the main door of the hall-house.

The southern of these anterooms had a second door in its east wall and at some stage the northern door was blocked up to a certain level and converted into a window. This room was apparently used as a stable. It measured 5.9 by 7.9 m. It had two rectangular wall-niches, one on the east wall and one on the west walls, and a raised platform, 45 cm. high, was constructed on the north-eastern side, paved with flagstones. Along the southern wall was a 1 m. wide bench cut in the bedrock. Another bench, 40 cm. wide, on the eastern wall south of the door was 1.2 m. long. On both of these benches were ash remains and *tabuns*.

The northern anteroom measured 5.4 by 7 m. Its floor was partly levelled bedrock and partly paved with flagstones like that of the main vault.⁶⁸ On the west wall was an installation with (at least) three arches, only two of which survived at the time of the excavation (Figure 29).⁶⁹ This was similar in form to the ovens in the main vault,⁷⁰ but unlike them it was plastered within and above with white plaster and had no opening to release the smoke. Consequently it must have been simply

⁶⁷ May 2000.

⁶⁸ See below, p. 347.

⁶⁹ Excavations took place in 1993 and 1994.

⁷⁰ See Kelter and Boas 2002.



Figure 29. Arched installation in farmhouse at Har Hozevim
(courtesy of Natasha May, IAA).

a row of arched cupboards similar to another four arches on the north wall. On the south wall of this anteroom were three small rectangular niches, two to the west of the door and one to the east of it. The door had a lock mechanism and the posthole was visible in the threshold stone. Originally this room had a second, 1 m. wide door on its northern wall with jambs that were constructed with diagonally-tooled ash-lars. This door was later sealed and the four arched cupboards were constructed on its inner face. A stone manger was found on the raised floor.

Two courtyards were formed around the building by the construction of a wall running east from the south-east corner of the southern anteroom, then north, broken by a 1.8 m. wide gate, then turning west further north, forming a courtyard on the east of the building that measured c. 12 by 20 m. The wall continued west with a slight broadening to form a second courtyard on the north of the hall-house (c. 8 by 22 m.). This courtyard had a wall with a gate, extending north from the north-east corner of the hall-house and closing with a second wall extending north-south against the north-west corner of the building.

The farmstead of Khirbat Lauza, some 7 km. north-west of Jerusalem, was partly excavated in 1986.⁷¹ Built on sloping ground, it consisted of farmlands, a large reservoir and a group of barrel-vaulted structures arranged around a walled-in courtyard with a gate on the east (Figure 30). The principal building is a massively constructed elongated vault, probably representing the ground floor of a hall house, measuring 21 by 5.5 m. (internally) with five embrasure windows on the east wall facing downhill. The courtyard measures c. 29 by 40 m. Another farmstead was located nearby at Qalonie (Motza). Of this complex there is a barrel-vaulted structure that may also have been the ground-floor level of a hall-house. Excavations have recently exposed additional vaults and a large cistern complex.

All three of these sites are grouped around a large vaulted structure, probably a hall-house that most likely formed the first phase of the complex, adjacent to which additional vaults and enclosed courtyards were constructed.

Rural Estate Centres (Manor Houses)

In the Frankish countryside are a number of buildings that some scholars have loosely termed “manor houses” because of their similarity to the manor houses that became increasingly a part of the European landscape in the Middle Ages. In France between the beginning of the eleventh century and the end of the fourteenth there was an increase in the number of noble households,⁷² and from the end of the twelfth century onwards this increase brought about the construction of a large number of fortified houses (*maisons fortes*). Remains of 75 such buildings in the Burgundy, Beaune and Nuits regions attest to this. In Britain the manorial system spawned a vast number of manor houses, perhaps as many as somewhere between 25,000 to 50,000⁷³ but remarkably few (about 30) stone-built examples dating to the twelfth and thirteenth centuries, survive. In Germany, although the manorial system was in decline by the twelfth century, there were still numerous manor houses; the smaller estates each had an individual manor house (*Salhof*), and on larger estates there were groups of manor houses.

⁷¹ See Ellenblum et al., 1996, pp. 189–98; Ellenblum, 1998, pp. 181–85.

⁷² Duby, 1988, p. 57.

⁷³ Barley, 1986, p. 107.

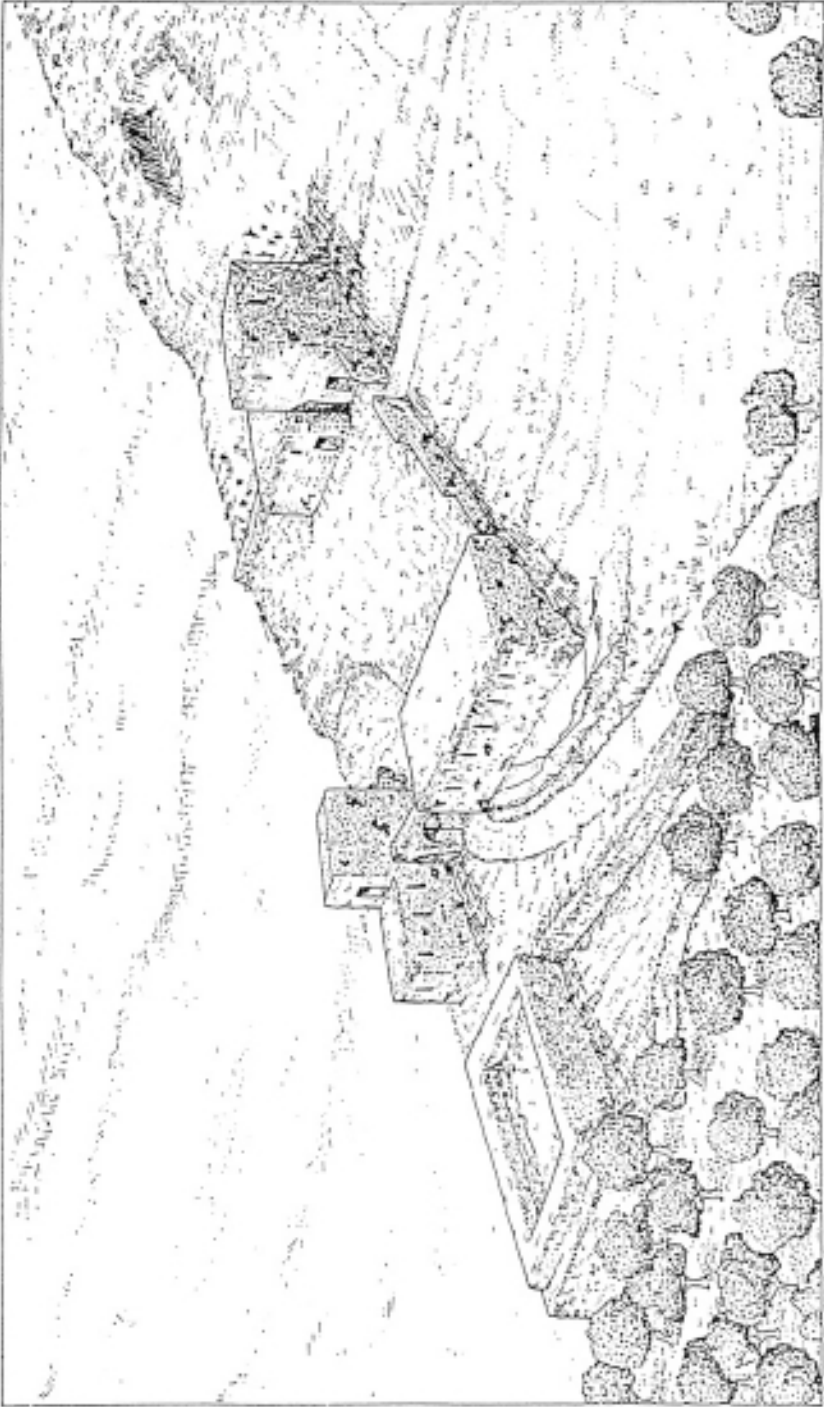


Figure 30. Farmhouse at Khirbat al-Lauza (Drawing by David Hully, courtesy of Ronnie Ellenblum).

In England, among the better-known examples that have survived are Boothby Pagnel in Lincolnshire, Little Wenham in Suffolk and Norbury Manor in Derbyshire. The term “manor house” is rather loosely applied in England and is not in a strict sense always used to refer to the administrative centre of a manorial estate; it is perhaps even more problematic when applied to rural administrative buildings in the Latin East, where the manorial system was only very partially introduced or, to be more accurate, only certain elements of it were introduced and not even such fundamental ones as the soil-bound peasant serfs and the demesne. The similarity of the buildings of this type found in the Latin East to Western manor houses would appear to be more an architectural resemblance than a functional one. In the East the landlord’s representative (*locator*) would have been involved in tax collecting rather than in overseeing work on demesne lands. The principal purpose for which such buildings were constructed was to deal with one of the major dilemmas facing the Franks once they had established their presence in the region—how to control and administer a large Muslim peasant population on which they were by and large dependent for agricultural produce and which probably remained numerically the single dominant presence in the countryside throughout the twelfth and thirteenth centuries. Apart from the need to prevent the possibility of unrest—such as peasant uprisings at a time when the threat of invasion by opposing forces from beyond the borders was a very real one—there was also the need to direct agricultural activities to meet Frankish requirements. The Franks needed to be able to ensure the sale of agricultural produce and manufactured goods to their population; there was also the need to enforce tax collection and to impose the lord’s monopolistic rights (*banalités*) on the peasant population.⁷⁴

All of these would have been necessary from the moment rural areas came under Frankish control following the occupation of Jerusalem in 1099. Had it been possible to establish a substantial Frankish presence in the countryside through the settlement of a large number of Franks in new villages, the situation would have been very different. However, with the small number of Frankish settlers available this was not an option. For several decades after the First Crusade there were not even enough Franks to defend the towns and roads of the

⁷⁴ The lord’s ban was a Western feudal institution which required that the peasants use the lords mills and ovens as well as certain other installations, and pay him for their use with a portion of the produce (flour, bread, wine).

kingdom, let alone to settle the countryside and there is little evidence for settlement activities prior to the 1140s. Instead the Franks appear to have settled on a solution not unlike that which they had adopted to face the problem of defence, which was also mainly the result of their major demographic handicap. The inability to muster a larger field army against engagements with the much more numerous Muslim forces had, to a certain extent, been alleviated by the construction of urban fortifications and fortresses. Similarly, the inability to settle a large number of Frankish peasants in the countryside was partly alleviated by the construction of a number of administrative outposts and tax collection depots.

In the first decades of the twelfth century the lack of internal security required that the buildings used to control the countryside be fortified strongholds. Only these would be able to hold their own in a hostile countryside prone to raids and under constant threat of invasion. Towers and courtyard castles of the *quadriburgium* design appear to have served as estate centres at the time. When internal security improved in the 1140s and 1150s, unfortified buildings were constructed. This development coincided with the establishment of unfortified Frankish villages and with the conversion of some castles that were no longer required to fulfil a military function, such as Burj Bardawil, south of Nablus, ar-Ram, north of Jerusalem, Bait Itab and Bethgibelin.⁷⁵

Common to all of these buildings were the domestic apartments. As these were probably generally located on the upper floor, and few first-floor apartments are preserved, they are difficult to reconstruct. Western manor houses had three principal domestic rooms—the hall, the dormitory and the solar.

a) *First-Floor Hall-Houses*

A common type of structure borrowed directly from European examples is the first-floor hall-house, a design typical of the twelfth and thirteenth centuries in the West. These were two-storey structures with a ground floor vaulted undercroft, the first floor usually divided into a hall and a solar or garderobe. They were accessed by an external

⁷⁵ These former castles were occasionally, as in all these examples, so affected by the changes made to them in conversion into rural administrative outposts that they could no longer function effectively as castles, or at least their defensive capabilities declined.

staircase. In the Latin East the upstairs halls have not generally survived but their size can be estimated by the dimensions of the ground-floor level and the thickness of the walls.⁷⁶ Access to the upper level was usually, as in keeps, by a staircase constructed within the walls. The hall was always the most important element. In the West it was the home of the lord, the place where the manorial court was held and where records of the manor were kept.⁷⁷ In the Latin East it would have been the domestic quarters of the *locator*, who would have had his own residence in one of the towns.

A well-preserved two-storey hall-house has survived in the village of Calansue (Qalansuwa). It was constructed of marginally dressed ashlar and measures c. 16.5 by 28/30 m.⁷⁸ The ground-floor level consists of eight groin-vaulted bays, four in each of two parallel rows supported on three free-standing piers and 12 pilasters. It measures 12.75 by 24.6/25.3 m. and has two doors, one on the western side of the south wall and another on the east wall. Lancet windows are found in the south-western and north-eastern bays and may have existed in all the bays on this level except where there were doors. There was a cistern under the north-eastern bay with a vent above so that water could be raised to the upper floor.⁷⁹ The first-floor hall was originally similarly formed of two rows of four groin-vaulted bays supported according to Victor Guérin by monolithic columns or, according to the *Survey of Western Palestine* by rectangular piers and apparently with transverse arches separating the bays, springing from corbels (one of which survives on the northern pilaster of the south-west bay).⁸⁰ Guérin saw a beautiful white marble Corinthian capital, reused as a mortar, in one of the village houses, which may have come from this hall. Only two of the bays on the west side of the building survive in the reconstructed upper storey. There is a large blocked door to the south, the principal door to the hall, with

⁷⁶ For example, Bethaatap measures 29 by 13.3 m., Rushmiya, 20.8 by 13.2 m., Qalansuwa, 24.6/25.3 by 12.75 m., Har Hozvim, 19 by 12.4 m., Qalonié (Motza), 30 by 15 m., 'Ain Salman, 26.9 by 13.8 m., al-Burj, 27.2 by 10.6 m. and Parva Mahumaria is c.27 by 10 m.

⁷⁷ See T. Rowley, *The High Middle Ages*, London, New York, 1986, p. 69.

⁷⁸ Pringle, 1986, pp. 41–58; 1997, p. 77.

⁷⁹ Such arrangements are not uncommon in towers as well (for example in the keep at Baisan).

⁸⁰ V. Guérin, *Samarie (Description géographique historique et archéologique de la Palestine)*, vol. 2, Paris, 1874, p. 351. For a reliable detailed description of this building see Pringle, 1986, pp. 43–53.

a staircase on its western side giving access to the roof. Stones in the lunette of this door have chevron-shaped joggled ashlar. This door would have been reached by an external staircase that has not survived (probably wooden). Such arrangements are found in Frankish towers as well. There is a double-splayed window on the western wall of the south-western bay and there may have been similar windows in the other bays. Masonry includes marginally-drafted ashlar and smooth ashlar some with masons' marks on door and window frames and in parts of the interior including the staircase. The walls have a mortar and rubble fill.

Of the hall house at Har Hozevim only the ground floor level and its collapsed vault survived and it was entirely dismantled in 1994. It measured 12.4 by 19 m. (external measurement) with north, south and east walls 2.5 m. thick and the west wall 1.5 m. The ground floor was barrel-vaulted; its collapsed vault was found in its entirety during the excavations prior to the dismantling of this structure.⁸¹ Construction of the walls was of large roughly hewn limestone field stones and chips with very roughly shaped and dressed corner ashlar (up to 1.7 m. long) that had marginal drafting. Only at the main entrance was a finer quality limestone masonry used. Both the interior and exterior walls were covered with dark grey plaster and a thin coat of whitish yellow lime. The internal width of the vault was 7.4 m. and its height was probably c. 7 m. The barrel vault was constructed of several layers of plaster, sand, mortar and stone chips. During its construction a wooden framework supported the vault, and the putlog holes could still be seen at the springing level of the vault. The floor was of limestone flagstones placed on a layer of sand and lime over the natural bedrock. In the west where the bedrock rose somewhat, there were no flagstones and the levelled bedrock served as the floor surface.

The main door was 2.2 m. wide and had a bolting mechanism including a beam bolt. The construction here was of fine diagonally-tooled stones, which were in limited use elsewhere in the structure. The floor was raised slightly at some stage. A smaller door (1 m. wide), located in the west wall, was partially blocked at some point and con-

⁸¹ The farmhouse at Har Hozevim was dismantled in 1994 after a second season of excavations. See May, 1997, pp. 81–84; 2000, pp. 40–45; Kletter and Boas, 2002, pp. 185–205.

verted into a window. The doorjambs and threshold stones of both doors had diagonal tooling. Inside the main door on the north an installation extended from the wall to the west. There was a row of two, originally at least three, arched ovens. They consisted of a wall fronted with constructed arches. The space between the arches and the wall would have allowed the smoke from the ovens to rise and the location near the door would have enabled some of the smoke to escape, although clearly this was not an ideal arrangement (unless there was a chimney flue for which no evidence was found). At some stage the third oven was eliminated; the installation was rounded off and a *tabun* (clay bread oven) was placed on the top. This change may have been carried out after the Crusader period, prior to the collapse of the vault.⁸² There were additional *tabuns* nearby against the south wall as well as a large monolithic stone table. On the east wall at the south-east corner was a plastered, vaulted wall-cupboard measuring 1.1 by 1.5 by 1.6 m. (Figure 31).

A small limestone column found during the first season of excavations (1993) may have come from a window on the upper storey. However, nothing of the first-floor hall had survived. Judging from the thickness of the walls the hall must have measured 14 by 8.4 m. (internally). It apparently had a gabled or sloping tiled roof as roof tiles were found during the excavations. Tiled roofs are not recorded elsewhere in manor houses. A staircase, 0.9 m. wide, built into the thickness of the wall on the right-hand side of the door as one entered, gave access to the upper level.

The massively built barrel vault at Qalonie (Motza) which may be the basement of a hall-house, measures 15 by 30 m. It has walls, 4 to 4.5 m. thick, constructed of large limestone fieldstones. The corners are of fine marginally-drafted ashlar quoins, the larger ones measuring c. 0.60 by 1.3 m. The inner face of the walls consists of smaller stones (50 cm.–1 m. in length) and between the inner and outer layers is a mortar and rubble fill. The walls in the north, south and east are preserved to just above the springing of the vault; the wall to the west is buried.

⁸² The presence of a small amount of Mamluk pottery within the vault illustrates the post Frankish use of this building. See Kletter and Boas, 2002, p. 193.



Figure 31. Large wall cupboard in farmhouse at Har Hozevim
(courtesy of Natasha May, IAA).

The hall house of al-Burj (al-Joz) is located above the village of al-Kurum south of Montjoie (Nebi Samwil) to the north-west of Jerusalem. Its plan is not unlike the Frankish village houses of al-Kurum (Figure 32), the principal difference being that it was considerably larger (it measures 27.2 by 10.6 m.) and was a broad house rather than a long one, with the entrance to the east. The construction is also similar to the village houses, but more massive, with walls 1.8 m. thick on the south, 2.35 m. thick on the west and north and 1.4 m. thick on the east. The walls were constructed of fieldstones with rubble and mortar fill. The interior walls and possibly also the exterior ones were covered with plaster. A good deal of plaster remains on parts of the interior that have survived, although this may be of more recent date. The doorjambs, which are roughly-dressed ashlar are probably also later additions. The four windows on the ground floor had pointed arches. It would seem that the upper part of this structure which survived intact up to 1968, was a reconstruction dating to after the Crusader period.⁸³ What can still be seen today is apparently part of the original Frankish structure, which was perhaps destroyed in 1187 or sometime shortly thereafter when the village below was abandoned and its houses were demolished.⁸⁴ The hall-house basement was barrel-vaulted, and according to nineteenth century accounts there was a staircase in the south-east wall leading to the first-floor hall or the roof.⁸⁵ There is no trace of this today, nor of the cistern near the staircase which appears in the Survey of Western Palestine (SWP) plan. The ruins as they survive are divided internally by a wall that does not appear on the SWP plan of 1883. This wall divides the area into a large room and a smaller one (1/3 the length of the entire vault). This is similar to the internal division in some of the houses of the village below. The description by the SWP notes that: "Older ruins of small town—walls, foundations, and heaps of stones—occur round the tower."⁸⁶ Traces of these can still be seen.⁸⁷ Guide books recall a

⁸³ On photographs taken before it was destroyed the difference in construction above the lower courses of stonework can be clearly seen. See M. Kochavi (ed.) *Judea, Samaria and the Golan: Archaeological Survey 1967–1971*, Jerusalem, 1972, Plate 87.

⁸⁴ See Matson, 1946, p. 241.

⁸⁵ Conder and Kitchener, 1883, p. 110.

⁸⁶ Ibid.

⁸⁷ One wonders how accurate the drawing is by H. Fenn of Khirbet Burj as seen from Nebi Samwil published in G. Ebers, H. Guthe, *Palastina in Bild und Wort*, Stuttgart und Leipzig, 1883, Fig. 249. If it is reliable there was a small village around the

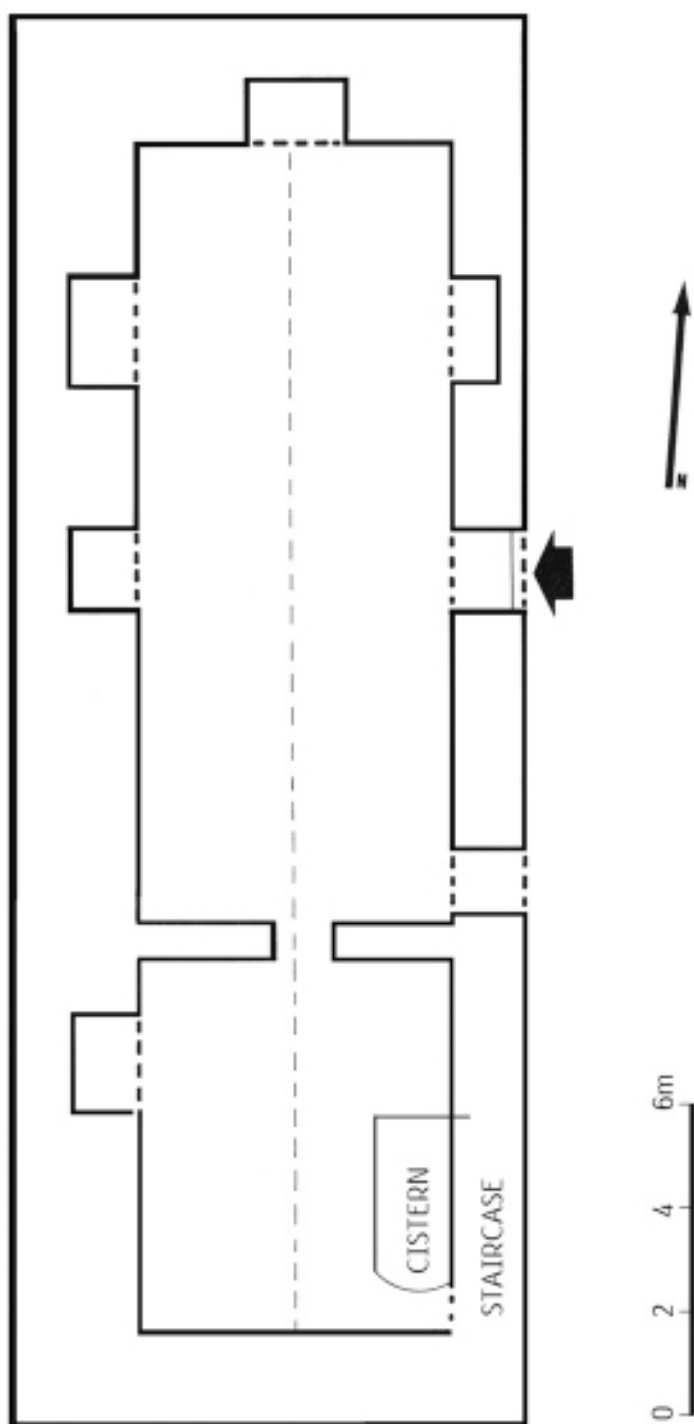


Figure 32. Al-Burj, hall-house above village at al-Kurum (drawing by author).

tradition identifying this building with the country house of Joseph of Arimathea or the place where, on their walk to Emmaus, the two disciples were joined by the risen Christ.⁸⁸

A large barrel vault located on the north side of a courtyard estate centre at Jifna, 21 km. north of Jerusalem, probably represents the first stage of that complex and may have been the basement of a first-floor hall-house.⁸⁹ It is a substantial structure with walls 2.1–2.4 m. thick. The interior measures 7.4 by 23.3 m. and is 6 m. high. It was originally entered from the courtyard but is now entered from the east. The walls are of fine-quality masonry. An olive press is located in this vault.

The basement of a hall-house known as Khirbat Rushmiya is located in a suburb of modern Haifa.⁹⁰ It had an annex or fore-building on its north-east corner defending its door from the east. The hall measures 20.8 by 13.2 m., with walls 2.5 m. thick. It has an unusual arrangement of a combined barrel vault and groin vault on the ground floor. The fore-building may have contained a staircase. It had a narrow portal at each end against the hall-house wall and an arrow slit defending each door. It also had an arrow embrasure on its north wall. At Bethaatap (Bait Itab) a first-floor hall-house served as the first stage of what later developed into a courtyard complex. The hall-house measured 29 by 13.3 m. It was semi-fortified, with walls 3 m. thick and was entered by an arched portal with slit machicolation into the ground floor and a staircase in the thickness of the wall to the left of the door led to the hall, which has not survived.

b) *Courtyard Estate Centres*

The improved security conditions in the Kingdom of Jerusalem in the middle of the twelfth century and the decline in the threat of invasion had two profound effects on the countryside: 1) rural settlement increased rapidly including the construction of new centres of rural

tower which can be clearly seen at its centre. The SWP, however, mentions the ruins of a small town. As both these works were published in 1883 Fenn's drawing is either of an earlier date or gives free reign to his imagination for details while remaining remarkably accurate with regard to topography. If this drawing can be relied on it provides some details of the hall-house that would otherwise be lost to us. It appears as a flat-roofed tower (as described by the SWP) of two stories, the upper one having a single large (arched?) window on each wall (on the two in view), while on the lower floor can be seen two or three smaller windows.

⁸⁸ H.C. Luke, J. Garstang, *The Traveller's Handbook for Palestine and Syria*, London, 1929, p. 216; Matson, 1946, p. 241.

⁸⁹ Pringle, 1997, p. 57.

⁹⁰ Ibid., pp. 90–91.

administration and planned villages of Frankish settlers; 2) existing administrative buildings, whether small towers, hall-houses or even larger castles were expanded by the construction of vaults, often around an enclosed courtyard. The construction of these vaults was intended to increase the area of roofed storage space for goods collected as taxes from the villages and to provide stables and barns for collected livestock. The formation of an enclosed courtyard provided yet more protected space. In addition many of these depots now included among their facilities, communal installations such as bakeries, olive mills or sugar refineries.

Aqua Bella is the best-preserved example of a Frankish “courtyard-type” estate centre. Little is known of its origins and history in the Crusader period and even its function is a matter of dispute; but there can be no doubt that it played an important role in Frankish administration of the countryside in the twelfth century. Only a single source throws light on its history, a document of 1168 from which it can be understood to have been a Hospitaller possession.⁹¹ The entire structure measured 27 by 36 m. It is remarkably well-preserved and much of the second storey survives, probably the result of it being built into the hillside and thus in a somewhat protected location. It has a square courtyard entered from the east, with barrel-vaulted halls on three sides (north, west and south). On the second-floor level there are barrel vaults to the north and west and a hall with three groin-vaulted bays, the easternmost bay being a chapel with remnants of the apse (Figure 33). On the south side of the hall is a turret possibly containing a latrine chamber. The upper level is reached via a staircase on the south wall of the courtyard. It gives access to the hall and chapel and also to an external gallery on the west. At this upper level are remains of a barrel-vaulted hall with a cistern and a gate opening to the west. At the northwest corner are remains of a small tower. The corner tower was the only part of the building visible from nearby Belmont and may have been intended as a signalling position.⁹²

Construction of this building is mainly of rough, squared blocks of coarse limestone quarried on the site, with the doors, windows, quoins, stairs and other details constructed of a softer stone brought from a more distant quarry. The latter have the typical Frankish diago-

⁹¹ *Cart. gén Hosp.* no. 309.

⁹² Pringle, 1993, p. 248.



Figure 33. Groin-vaulted hall at Aqua Bella (photograph by author).

nal tooling and there are numerous examples of masons' marks. The masonry is set with white mortar containing charcoal fragments and occasionally pieces of crushed pottery. The surface on the interior, and possibly the exterior as well, was covered with plaster. Some plaster can still be seen on the exterior, particularly in protected places such as the inset at the western door. The underlying mortar was impressed in herringbone pattern to receive the plaster, a technique found on other Frankish buildings such as the Red Tower, the Benedictine convent in Bethany and the castle of Maldoim on the road to Jericho.⁹³ It can also be seen in the Frankish houses excavated by A. Negev in Caesarea. The inner core of the walls is filled with rubble and reddish-orange mortar.

Another "courtyard-type" estate centre owned by the Hospitallers was nearby Belmont (now in Kibbutz Tsova). The inner ward of what at some stage was developed into a full-scale castle was originally a courtyard building very similar in design to Aqua Bella and, like it, was a Hospitaller possession.⁹⁴ Roughly rectangular, it measured 33 by

⁹³ Pringle, 1986, p. 104.

⁹⁴ R. Harper and D. Pringle, *Belmont Castle: The Excavation of a Crusader Stronghold in the Kingdom of Jerusalem*, Oxford, 2000, pp. 195–97.

39–41 m. The outer walls were 2.6–3.8 m. thick. Three barrel-vaulted ranges surrounded a courtyard on the south, west and north sides. Later groin vaults were added on the east, reducing the area of the courtyard. The main gate on the east was 1.69 m. wide and was flanked by a solid turret on its south 1.96 m. wide and projecting 2.6 m. A secondary door located on the north was 0.78 m. wide and was also flanked by a turret to its east, 3.3 m. wide and projecting 2.3 metres. Staircases on the north and south of the courtyard gave access to the upper level, nothing of which has survived.

At ar-Ram, north of Jerusalem a fortified tower that fulfilled the function of an administration centre in the early twelfth century evolved over time into a larger courtyard building which enabled it to satisfactorily fulfil the function of a private rural estate centre with sufficient roofed space and an enclosed quadrangular courtyard. An enclosure wall was constructed extending north from the north-west corner of the tower for a distance of c. 25.7 m., then turning in a generally easterly direction c. 58 m., then south-west c. 40 m. and finally at least 35 m. to a position some 7.5 m. south of the tower's south-east corner. As it evolved, five barrel vaults were built around the courtyard by constructing walls parallel to these outer walls and raising barrel vaults over them. The vaults were between 5.9 and c. 7 m. wide (internally) except for a small semi-vault running north-south against the southern part of the inner wall of the eastern range which was less than 3 m. wide.

Similarly, the estate centre at Jifna evolved into a large, rectangular courtyard building (25.5 by 30 m.).⁹⁵ To its east is a monumental gate with a slit machicolation. Recessed in a large, pointed arch is a door with a flat, stepped lintel above which is a relieving arch (filled). The lintel has voussoirs whose upper sides form a horizontal line.⁹⁶ There are rooms on either side of the passage from the gate. To the north, the large barrel vault mentioned above which was originally entered from the courtyard, was now entered from the east. A similar development, probably dating to the middle of the twelfth century, can be seen at Bethaatap (Bait Itab) (Figure 34). The first-floor hall-house was expanded by a series of single-storey barrel vaults constructed to its south in such a manner that they formed a slightly trapezoid

⁹⁵ Benvenisti gives two different plans. See 1970, p. 240 and 1982, p. 146, Fig. 16.

⁹⁶ See Burgoyne, 1987, Plate 24.3.



Figure 34. Estate centre at Bethaatap (Bait Itab) (photograph by author).

courtyard complex measuring 40/45.7 (e-w) by 59 m. (n-s). Another courtyard complex was constructed at Bir Zait. This building measures c. 35 by 37 m. and had barrel vaults on at least three of its sides and an enclosed courtyard with a cistern. At Castellare Rogerii Longobardi (Umm Khalid) a Frankish ruin, no longer visible, but described by the SWP and recently in more detail by Pringle, was the southern range of a courtyard building measuring possibly c. 33 m. square. In 1946 one complete barrel-vaulted chamber was still visible, running east-west with three openings in its north wall, presumably onto the courtyard. There was one narrow opening and an arrow slit on its south wall, and to its east a section of a barrel vault running north-south that would have formed the southern end of the east wing. A small turret (3.44 m. square) projected from the south-east corner. There may have been a narrow staircase 1 m. wide in the east wall of this vault perhaps leading up to a position on the turret.

Burj as-Sahl is a courtyard building located 12 km. east of Haifa port. It measures c. 50 m. square with barrel vaults on three sides, and probably had a gate on the fourth, northern side. The outer walls are c. 2.5 m. thick and the vaults are about 6.6 m. wide (internally). On the coastal road north of Acre was a Templar estate centre called Somelaria Templi (la Semerrie), first referred to as a Templar-owned

village in 1277.⁹⁷ This courtyard complex has never been excavated, but an examination of its surface remains shows it to be a rectangular courtyard complex measuring 60.5 by 57 m. Ruins of the Hospitaller estate centre of Recordane can be seen on the ancient tell just to the south of the Templar tower and mill now known as Kurdana,⁹⁸ and another unexcavated courtyard complex is located 3 km. north west of Kurdana at Tel Da'uk. Until the recent re-identification of the mills, the latter was regarded as the location of the Templar mill of Doq. Yet another courtyard complex which was partly excavated is La Hadia (Horbat Uza). A section of this courtyard building on the Acre-Safed road 8 km. east of Acre was excavated in 1991 by Nimrod Getzov.⁹⁹

In Cyprus a more elaborate example of this type of building can be seen at the Royal Manor of the Lusignans at Kouklia (Covocle). It is a finely constructed Gothic building situated in a prominent location and occupying at least two sides (east and south) of the square courtyard. The east wing is well preserved. The hall on its ground floor measures 30.24 by 6.95 m. and consists of four rib-vaulted bays and an annex (of later date) with a pointed barrel vault to the north that is 4.5 m. wide. The ribbed bays vary in size, the southern one being narrower and the northern one broader than the central bays. They have chamfered ribs supported on simple bosses and brackets, the latter placed just above the floor level. On the exterior of the east wall are buttresses. The annex and each of the bays except the southernmost one have narrow slits opening into small rectangular windows on their east walls, and the third bay from the south has a door on its western wall. The upper floor has four small square windows and a timber roof with thick beams supported on posts and struts in the centre.

Rural Monasteries

Rural monasteries became a well-established feature of the Frankish countryside. Several small monastic complexes were founded or revived in the twelfth century. Adjacent to and at a lower level than

⁹⁷ *RRH*, no. 1413.

⁹⁸ Until recently the mill and tower of Kurdana were identified with the Hospitaller mill Recordane but a recent discovery of another mill upstream at the spring has shown this to be incorrect (i.e., the tower and mill are in fact Doq, the Templar mill which is known to have been downstream to the Hospitaller mill. See I. Shaked, "Identifying the Medieval Flour Mills at Doq and Recordane", *Cathedra* 98 (2000) (Hebrew), pp. 61–72.

⁹⁹ Personal communication. The final publication of this site is in press.

the Church of St. John in the Woods in En Kerem is a monastic complex consisting of an irregular enclosed courtyard with a cistern and two structures to the south, a small barrel-vaulted structure measuring 9.9/10.5 by 5.9 m. with a broad doorway and to its east a larger groin-vaulted structure with six groin-vaulted bays supported on two massive square piers and two splayed windows facing the courtyard.¹⁰⁰ The latter includes a rock-cut cistern, and a second cistern is located in the courtyard, the two connected by a vaulted water channel that carries water from the spring located in the crypt under the church.

At Abu Ghosh (Emmaus) to the east of the Church of Resurrection are the Hospitallers' monastic buildings built into and incorporating parts of the ninth century Muslim caravanserai. Adjacent to the east wall of the church was a large building that has not survived. Its upper storey, which possibly served as the dormitory, was connected to the church by a staircase, perhaps the night stairs of the brothers. On the south-eastern corner of the complex is a reused barrel-vaulted room, its vault strengthened with a transverse arch at its centre. This was possibly a storage room or alternatively served as the refectory. An embrasure window on the north wall and possibly another on the south wall, illuminated this room, and a large bread oven was built into its east wall. On its south-east side was a latrine, the latrine pit being a reused cistern.

The nunnery at Bethany was an important monastic establishment. William of Tyre writes of the establishment of the nunnery by Queen Melisende for her sister Iveta in February 1138 in the village of Bethany which had formerly been a possession of the canons of the Church of the Holy Sepulchre.¹⁰¹ As this establishment was located on the edge of the desert, the queen had a strong tower constructed to defend the nuns. A new church was built to the west of the existing sixth century Church of St Lazarus, as well as a cloister, chapter house dormitory and other conventual buildings.¹⁰²

Ruins of another monastic compound are located at Allar as-Sufla (H. Tannur) 19 km. south-west of Jerusalem. This has been identified as a farmstead¹⁰³ but more plausibly as a monastic complex, possibly

¹⁰⁰ See Pringle 1993, pp. 44–46.

¹⁰¹ WT 15.26.

¹⁰² Eracles *RHC (Occ.)* I, 700.

¹⁰³ Benvenisti, 1970, pp. 235–36; 1982, p. 152.

a Cistercian one.¹⁰⁴ It consists of a group of barrel-vaulted structures around a courtyard with a chapel extending beyond the compound towards the east. Other than the chapel there are at least five vaults to be seen, but there may have been more on the northern side of the compound. The existing vaults consist of three barrel vaults forming the southern range, apparently two of these having a second storey with remnants of a staircase surviving. These apparently formed the living quarters, and two parallel vaults, 30 m. long and 6.10 m. wide (internally) on the northwest probably functioned as storerooms. The larger of the two southern vaults, now badly ruined, measured 26 by 7 m. (internally). It had two arched openings on the north wall and four blind arches, one on the north and three on the south, possibly wall cupboards similar to those at al-Burj. It opened into the western vault which measured 6.1 by 13.8 m. and had an arched door on its east wall and a blind arch opposite on its west wall. The remainder of the complex included an enclosure wall which is now evident only on the east adjoining the chapel.

¹⁰⁴ Pringle suggests identifying it with the Cistercian house called *Saluatio*, a sister house of Belmont in the County of Tripoli. See Pringle, 1993, pp. 49ff.

CHAPTER FOUR

LIVING ROOMS AND BEDROOMS

A: *Halls and Solars*

Halls and solars were prominent among the domestic apartments of larger houses and palaces. The term *solar* (*solarium* in Latin) refers to a room above ground level, but in the Middle Ages it came to be used to describe a large room on an upper level that would have been used as a bedroom and reception hall. The source of the word has been variously given as having originated in the French word *sole* meaning alone or *sol* in Latin meaning sun or a combination of the French words *sol* meaning floor and *solive*, beam.¹ At Montailou in Languedoc the presence of a *solier*, a first floor above the kitchen, which was reached from the ground floor by means of a ladder, was considered a sign of wealth.² In the Latin East the term is not as widely used as in the West but does appear on occasion in such references as the “newly built solar chamber” in the royal palace at Jerusalem referred to by Theoderich in 1169.³ There is reference to a “*solarium medium*” in the palace of the *bailli* in the Venetian quarter of Acre.⁴ In house 1:20 in the Genoese quarter there are remains of a first-floor *solar*, the only one known to have survived in Acre, where very few houses are preserved above the ground-floor level. It may well be typical of many residences in the medieval city. It measured 3.78 by 12.73 m. and was roofed with three groin-vaulted bays. At one end was an embrasure window high in a thick wall, at the other a door leading out either to a landing with a staircase down to the lane below or to a balcony overlooking the street (Figure 35).

¹ For the latter see Wood, 1965, p. 414.

² Le Roy Ladurie, 1984, p. 39.

³ Theodericus, 4, p. 146.

⁴ Berggötz, 1991, p. 172.



Figure 35. First-floor hall in house in Genoese quarter, Acre (photograph by author).

Solars or first-floor halls were present in many rural buildings, particularly estate centres and farmhouses.⁵ One example is the groin-vaulted hall at Aqua Bella which Pringle suggested may have been used as an infirmary hall.⁶ The hall was also a central component in many castles. It was where much administrative business and ceremony took place. At Beaufort a first-floor hall was constructed possibly by the Templars (between 1260 and 1268), on the east side of the upper bailey.⁷ It was entered through an elaborate doorway on the west. The hall measured 6 by 8 m. (internally) and was vaulted with two bays of rib vaults that had polygonal pilasters and plain impost mouldings.⁸ At Montfort the Teutonic builders constructed a similar rib-vaulted hall below the castle on the north. It has been variously interpreted as a chapel, farm-

⁵ Halls as a basic part of rural administrative buildings (first-floor hall-houses) are discussed above, pp. 100–107.

⁶ Pringle, 1992, p. 165.

⁷ See P. Deschamps, *Les châteaux des croisés en Terre Sainte*, vol. 2, *La défense du royaume de Jérusalem*, Bibliothèque archéologique et historique, 34, Paris, 1939 (texte), pp. 206, 208.

⁸ Pringle, 1993, p. 110.

house, guardhouse, guesthouse or infirmary.⁹ Another more elaborate hall at Montfort was located in the upper castle at the western end of the main (upper) ward. It appears to have been part of a two-storey structure built over a double barrel-vaulted basement and was probably rectangular in form, roofed with rib-vaulting supported by a massive octagonal central pier and half-octagonal pilasters. It was doubtlessly intended to serve as a reception hall, with domestic apartments located above it (a latrine chute on the south demonstrates a domestic function in part of this structure). At Chastiau Pelerin ('Atlit) an elaborate rib-vaulted hall was located in the third storey level of the north tower. Remains of this hall can be seen in the remnants of the rib vaulting and elaborate carved corbels surviving on the east wall. The hall was reached by a staircase constructed in the thickness of the west wall which led up from an entrance in the courtyard. According to the excavator, C.N. Johns, there was a stout circular pier in the centre of the hall which supported the rib-vaulting dividing it into two bays.¹⁰ The corbels supporting the vault ribs are carved in the shape of heads, the larger central one, which carried two diagonal ribs as well as the rib to the central pier, was more massive, consisting of three heads with crockets like crowns. The other two heads were that of a youth on the left and of a bearded man on the right.

Halls such as these would certainly have functioned as locations for carrying out much of the business of a castle. They would in many cases have had nearby domestic quarters, and in simpler buildings such as some of the rural hall-houses the hall itself may have had the additional function of sleeping quarters. In the West the bedroom was known as the *camera* (as opposed to the *sala*—living room). Archaeological evidence for sleeping arrangements in domestic buildings is, not surprisingly, very slim. Beds, which would identify the room's function, do not of course survive. In any houses of two or more storeys, and it seems likely that many houses, both urban and rural, had more than one storey, bedrooms would usually have been located on the upper level, which was more private and safer. Evidence suggesting this can be found both in written sources and occasionally in archaeological remains although unfortunately the upper storeys

⁹ See Benvenisti, 1970, p. 334; Pringle, 1986, pp.67–68, 71–75.

¹⁰ Johns, 1997 (1), p. 44. The fallen capital of this pier was found in the debris almost directly below where it once stood.

themselves rarely survive. In houses in the West people slept either in or near the kitchen (for warmth) or on the first floor¹¹ and this appear to have generally been the case in the Latin East. The apparent presence of a latrine on the upper floor of a large merchant's house in the north of Caesarea suggests that this floor contained domestic apartments. Similarly, in a rural context, the probable location of latrines on an upper level in the estate centres of Aqua Bella and Burj Bardawil makes it likely that sleeping quarters were located on that level. In village houses the area on the ground floor was often extremely limited. The average internal dimensions of the ground floor of houses at al-Kurum were 4 by 10 m. much of which space was taken up by a variety of installations including wine and oil press, ovens, cooking platforms, open cisterns, benches and latrines. In many cases there was simply not enough room for beds and if this level was used for sleeping it would have been extremely uncomfortable. It seems likely that, although there is little direct evidence for the presence of an upper storey, there were probably upstairs domestic rooms in most of these houses. The lack of staircases might be explained by there having been either wooden stairs or a ladder that was used to reach the upper level. The latter would have been beneficial in improving the security of the household at night, when the ladder could have been drawn up.

B: *Communal Dormitory*

In the rules and statutes of monastic houses and of the Military Orders there are distinct and detailed regulations regarding the dormitory, its location and the behaviour required of the brothers. In these celibate communities the brothers slept in one room (unless they had some official duties), dressed in a shirt, drawers and hose, and a light was to be left on during the night.¹² Their bedding consisted of a sleeping bag, a rug, a sheet, a linen or buckram coverlet and a pillow.¹³ Somewhat surprisingly, it appears that it was permitted for Hospitaller brothers to drink (presumably wine) in the dormitory of the *auberge*

¹¹ For example at Montailou. See Le Roy Ladurie, 1984, p. 38.

¹² Upton-Ward, no. 37, p. 29, 138, p. 53, 680, p. 173.

¹³ The Templar brother was similarly supplied with a bolster, a blanket that could be of linen (soft pile) or alternatively he might have a rug. Ibid., no. 21, p. 25.

whereas elsewhere, except in the refectory, they could drink only if they received special permission.¹⁴

The location of the dormitory can often only be surmised. Sometimes we can establish its location by identifying other parts of the layout—such as the position of the latrines, which would normally be adjacent to the dormitory in the same wing, or the location of a church or chapel, which was generally adjacent to the dormitory to enable the brothers to descend with relative ease for night prayers. It is possible that the upper storey of the tower of Chateau Blanche served as the Templar knights' dormitory. At Belvoir Castle the dormitory could have been located in any one of a number of vaulted chambers, but perhaps its most likely location was the northern wing of the first floor adjacent to the chapel on the west wing. At Chastiau Pelerin ('Atlit') the dormitory may have been located in the vaulted hall just to the south-west of the castle church. This was the largest of the galleries on the western side of the castle; measured 60 by 34 m. and was divided into three aisles by two rows of columns supporting 18 bays.¹⁵ Its location would have enabled the brothers to go directly into the church when the bell rang for night services. If there was a door on the north-east wall it would have been ideally positioned opposite the doorway into the southern porch of the church, and that doorway would probably have been specifically intended for the use of the brothers for night services, the other two larger doors of the church being for the use of others or for services during the day when the brothers would have been elsewhere than in the dormitory. Other than a probable north-eastern door and a door or window Johns refers to at the far end of the long wall (probably a reference to the north-west wall), the dormitory (if that is indeed what it was) was entered using a staircase in the thickness of an adjacent wall.¹⁶ It is difficult to identify which of the vaulted structures within the central compound at Bethgibelin would have served as the dormitory. Similarly the dormitory at Toron des Chevaliers (Latrun) could have been any of a number of vaulted structures in the central ward, perhaps the row of vaults extending along the southern side which adjoined the supposed chapel on the east. At Iudin domestic apartments are identified on the upper floor of the

¹⁴ Statutes of Fr. John de Villiers Acre in 1288, in King, no. 9.

¹⁵ Johns, 1997 (1), p. 60.

¹⁶ On the second door or window see Johns, 1997, (1), p. 60.

east tower (A on Pringle's plan).¹⁷ The presence of latrine closets here makes the nature of these apartments clear, but it is less than clear that they served as the brothers' communal dormitory. At Montfort the dormitory was certainly located in the central ward between the keep on the east and the rib-vaulted hall on the west. If, as Pringle suggests, the chapel was on the first-floor level above the room designated by Dean as J, then the dormitory would most likely have occupied one of the adjacent rooms, perhaps the room above Dean's H. A recent discovery of a latrine chute similar to the one further west below the castle hall, supports this location. In the Sea Castle at Sidon there was a large, two-storey hall with 16 rib-vaulted bays supported on five massive and two smaller free-standing octagonal piers on the ground-floor level occupying most of the northern half of the castle. This has been interpreted as a refectory by Ben Dov and, more satisfactorily as the residential wing of the knights and sergeants by Pringle.¹⁸ It is rather large for a refectory alone and probably contained both dormitory and refectory.

The monastic dormitory of the Church of the Nativity at Bethlehem was located on the north side of the cloister. It measured some 26.5 by 9 m. and was entered via a door at the western end of its south wall. It rose over a surviving barrel-vaulted room of similar proportions and some 7.8 m. high.¹⁹ The location of the dormitory at Bethany can be more or less deduced by the surviving remains of the convent, which were described by Pringle.²⁰ He notes that the eastern wing of the cloister contained what was probably the chapter house on the ground floor, and there are the remains of a staircase leading up to what was probably the dormitory, which has not survived.²¹ A latrine would probably have been located at the end of the wing. This would suggest that the dormitory was in the upper level apartments in this wing. At Abu Ghosh (Emmaus) the sleeping areas of the hospice or conventual buildings to the east of the Church of Resurrection would probably have been located in the series of small rooms located on the south and east sides of the earlier (ninth century) courtyard. The

¹⁷ R.D. Pringle, A. Petersen, M. Dow and C. Singer, "Qal'at Jiddin: A Castle of the Crusader and Ottoman Periods in Galilee", *Levant* 26 (1994), pp. 135–66.

¹⁸ See M. Ben-Dov, "The Sea Fort and Land Fort at Sidon", *Qadmoniot* 19, (1986) (Hebrew), p. 119, and Pringle, 1998, p. 324.

¹⁹ Pringle, 1993, pp. 142–45, Figs. 45–46, 149.

²⁰ *Ibid.*, pp. 130–34, Figs. 42–43, p. 132, Plate 79, p. 133.

²¹ Pringle, 1993, p. 133.

dormitory at Bellapais in northern Cyprus appears to have provided reasonably comfortable living quarters for the Augustinian monks. As is often the case in monastic complexes, it was located on the first floor of the east wing of the cloister. It was a rib-vaulted buttressed hall of seven bays, taking up the entire upper floor. Today the vaults and floor are gone. However, the outer walls are preserved to a considerable height and the pilaster columns, brackets and arch springs can still be observed. The ribs spring from large octagonal floriated capitals. There is a pointed-arch window high in the wall of each bay, each with a hood-mould on the exterior and another round-arched window together with a rectangular wall cupboard low on the wall of each bay which would have been conveniently next to the bed of each monk. On the north end of the dormitory was a pointed-arch door and, above, an *oeil-de-boeuf* with tracery. A passage in the thickness of the south wall gave access, via a staircase to the cloister and to the roof of the cloister. A work-room and the chapter house were located below the dormitory.

In the monastery at al-Baina (Dair al-Asad) there was not the usual communal dormitory but rather a group of small cells located on the upper level of the conventual buildings north of the church.²² There may have been as many as twelve such cells, each measuring 2.5 by 3.5 m. (internally), with small windows above the doors for illumination and ventilation. Pringle sees the presence of cells rather than a communal dormitory, which was found in almost all Western monasteries, as most probably identifying the occupants as Orthodox.

²² Pringle, 1993, pp. 89–91.

CHAPTER FIVE

KITCHENS, DINING SPACE AND FOOD

Contemporary written sources in the Latin East are replete with references to food and related matters. There are references to the produce grown or raised and sold in the markets, and to the various food-related industries, in a variety of sources including pilgrims' and travellers' texts. In addition there is information in written sources and archaeological studies on cooking and food, the baking of bread and on the location and layout of kitchens and dining rooms. Monastic rules and those of the Military Orders are informative regarding conditions and appropriate behaviour in the communal refectories and the types of foods that were served there.

A: The Kitchen

Cooking and baking were carried out in a kitchen or, in smaller houses, in a designated area on the ground floor or in the courtyard, usually near a cistern. In some cases this was nothing more than a raised stone platform. There are a few cases where excavated rooms in private houses could be identified as kitchens. In houses in the village of al-Kurum cooking was done towards the back of the ground floor. The back room of the ground floor in house 12:3 served as the kitchen. It contained a large cistern with a settling tank, a cooking platform on which were found traces of ash, a large number of cooking pot shards and a shallow pit covered with a stone slab and a drainage channel that may have been a latrine.

In castles and monastic houses the kitchen was generally located at ground-floor level on one side of the courtyard or cloister. In the Hospitaller castle of Belvoir, the kitchen was located at the south-east corner of the inner ward. It occupied a small corner room adjacent to the refectory and contained three ovens that had arched stoking holes outside in the adjacent passageway, above which was a shared

slit chimney between two walls.¹ Opposite the ovens were a work area and a large plastered bin probably used to store grain. Amongst the finds from the excavations carried out in 1966 were two stone mortars.² At Chastiau Pelerin the kitchen appears to have occupied the north end of the large vaulted hall in the south-west. Two large round ovens were located outside the northernmost door of the vault, partly built into the wall. They may have opened inside the vault. One of these ovens was built of stone lined with red baked brick, the other was entirely of stone.³ In the castle at Arsur the kitchen was located to the north of the keep and south of a hall that occupied the north-west corner of the castle (probably the refectory). It was a stone-paved L-shaped room of 7 by 10 m. The door from the central courtyard of the castle was located on the eastern wall, adjacent to which, on the north, were two rectangular plastered basins and ceramic pipes. There were five ovens along the kitchen's northern wall (Figure 36), with a passage between them and the northern hall where the stoking holes were located. When it was excavated the plastered floor of the passage was found to be covered with a layer of ash from the ovens. A niche located at the end of the corridor 1.2 m. above the floor opened onto a chute that could have served for ventilation or as a means of reaching the upper level, using a ladder. Under the kitchen floor was a drainage channel. To the west was a service room with a plastered floor.⁴

The kitchens at Crac des Chevaliers were located in the western vaulted range of the inner ward. The kitchens in the Benedictine convent at Bethany were located to the south of the east church, to the south of a cistern. Here, in a large hall roofed with four groin-vaulted bays, a group of three stone-built ovens was found by the excavators, but it was subsequently destroyed.⁵ The horseshoe-shaped ovens opened to the east, and each was flanked by chamfered piers.

¹ A similar chimney was found in the ovens of the rural estate centre at Har Hozevim.

² For an illustration of one of these (with a board-game incised on its base) see M. Ben-Dov, "Crusader Fortresses in Eretz Israel", *Qadmoniot* 8,4 (1975) (Hebrew), p. 106.

³ Johns, 1997 (1), p. 60.

⁴ Roll et al. 2000, p. 30. As the excavators found no evidence for either Frankish use or Mamluk destruction debris on the floor of the kitchen, they suggest that it may have been a post-Frankish (Mamluk) construction. However, it is unlikely that after the systematic destruction by Baybars in 1265 this or any other part of the castle would have been used for residential purposes.

⁵ Saller, 1957, Plate 71a–c.



Figure 36. Ovens in kitchen of Arsur Castle (photograph by author).

The openings of the ovens were arched. Near the ovens were a water-trough and a large stone basin, the latter possibly used for preparing dough.⁶ Very little survives of the kitchens at the Augustinian monastery of Bellapais in northern Cyprus, which were located to the south-west of the refectory.

B: *Cooking*

Cooking was done in ovens or on open fireplaces or cooking areas using iron or more commonly, ceramic cooking vessels. Iron cooking pots of the Crusader period have not been found although they may have been fairly commonplace in the large communal kitchens of castles and monasteries and apparently were among the possessions of individual knights in the Military Orders.⁷ Such cooking pots are

⁶ Ibid., pp. 105–6, Fig. 22, pls. 70–71.

⁷ The Hierarchial Statutes of the Templars (no. 140) record that among their equipment each knight brother should have a cauldron for cooking. See Upton-Ward, p. 54. The cauldron was among the few items that the sergeant brothers did not receive (no. 141).



Figure 37. Medieval glazed cooking vessels (photograph by Clara Amit, courtesy of Edna Stern, IAA).

frequently illustrated in medieval manuscript illuminations.⁸ The more common vessels used for cooking in most houses were earthenware and of two principal types; globular, thin-walled pots with two raised strap handles which are typical in the region from the ninth century CE. onwards and deeper thicker-walled pots which came into use in the thirteenth century (Figure 37).⁹ The base of the former type was lined with a lead glaze inside to prevent the food from sticking to the vessel. Such pots would have been ideal for cooking broths and stews. Deeper, thicker-walled pots came into use in the middle of the thirteenth century. These had ledge rims that could have supported a lid (although no lids have been found) and smaller handles and were

⁸ The thirteenth century *Morgan Bible* (*Maciejowski Bible*) shows a typical iron cooking pot in an illustration showing a cart carrying arms, armour and supplies (David bringing the supplies provided by Jesse to the Israelite camp), Pierpont Morgan Library New York Ms M 638, leaf 27.

⁹ It is possible that iron and ceramic pots were also used in conjunction, the ceramic pot placed inside the iron one. An illustration in the *Romance of Alexander* (Bodl. Lib. Oxf. MS. 264, fol. 170, verso) shows three iron cooking pots with what appear to be earthenware cooking pots within them. See D. Hartley and M.M. Elliot, *Life and Work of the People of England. The Fourteenth Century*, London, 1928, Plates 7a and 11b.

glazed on the inside all the way up to the rim. They were imported from the north of the kingdom (modern Lebanon).¹⁰ Some hand-made cooking pots were imported from Cyprus.¹¹ Such cooking pots would have been fairly cheap to purchase. In addition to cooking pots the Franks used ceramic frying pans or baking dishes—flat-bottomed vessels with glaze on the base.¹² Pots would be hung over the fire on an iron hook. Such a hook was found at Chastiau Pelerin.¹³ The fire may have been lit using a *znad*, a small object used with a flint and tinder.¹⁴ Another piece of equipment used in kitchens for the preparation of food was the pestle and mortar. Stone pestles are common finds in domestic sites.¹⁵

In those Frankish cities that experienced continual inundations of pilgrims and travelling merchants, the ongoing need for prepared food was enough to warrant permanent venues selling prepared foods. In the case of Jerusalem the central market street of the Triple Market in the heart of the city is identified as such by its name, Malquisinat (Street of Bad Cooking) or Vicus Coquinatus (Kocatrice) (Street of the Cooks).¹⁶ The idea was not a Frankish innovation; in the *Geniza* sources it is recorded that it was common practice for people to bring home cooked food from the bazaar.¹⁷ Professional cooks in the market advertised their occupation on the walls of their shops. An inscription discovered in a mason's shop in Jerusalem in the late nineteenth century, and since lost, has fragments of a difficult to decipher inscription that possibly refers to a cook [*coq*]uus and in addition displays a row of kitchen utensils including a knife, a chopper, a ladle and a

¹⁰ E.J. Stern and S.Y. Waksman, "Pottery from Crusader Acre: A Typological and Analytical Study," in C. Bakirtzis (ed.), *VII^e Congrès international sur la céramique médiévale en Méditerranée, Thessaloniki 11–16 octobre 1999*, Athens, 2003, pp. 173–75.

¹¹ M. Avissar and E.J. Stern, *Pottery of the Crusader, Ayyubid and Mamluk Periods in Israel*, IAA Reports 26, Jerusalem, 2005, pp. 94–95.

¹² Avissar and Stern, 2005, pp. 96–99.

¹³ Johns VI, p. 48, Fig. 15, 6.

¹⁴ Ibid., Fig. 15.18. See photograph of a *znad* from 'Atlit (although possibly later) in K. Raphael, "Crusader Arms and Armour", in Rozenberg, 1999, p. 155, Plate 19 (top left).

¹⁵ Other than those mentioned above from the excavations at Belvoir (above, p. 124) mortars have been found in many sites including Montfort (Dean, 1927, p. 33, Fig. 44), al-Qubaiba (Bagatti, 1993, p. 168, photo 9.12). Two fine stone mortars were found in excavations of a house in the north-east area of Acre (locus 922, D. Syon, in press).

¹⁶ *Cart. gén. Hosp.*, nos. 249, 376; *RRH*, nos. 329, 421, 431, 528; *La Citez de Jherusalem*, 1896, p. 196, 201. See also Boas, 2001, pp. 147–51.

¹⁷ Goitein, 1983, p. 141.

strainer spoon.¹⁸ The profession of cook was a respectable one which was on occasion recorded in a family name.¹⁹ However, in houses of the Military Orders and probably in most monastic houses as well, where the brothers (or sisters) took turns working in the kitchen, kitchen work was considered among the basest tasks.²⁰ Nevertheless, even here the cook himself had a certain prestige.²¹ The master of the Templars had his own cook.²² A description by Usāmah suggests that a fair level of hygiene and fine cooking was to be found among the better class of Franks and that they sometimes employed Muslim cooks and refrained from eating pork:

I dispatched one of my men to Antioch on business. There was in Antioch at that time al-Raʿīs Theodoros Sophrianos [*tādrus ibn-al-saffi*],²³ to whom I was bound by mutual ties of amity. His influence in Antioch was supreme. One day he said to my man, "I am invited by a friend of mine who is a Frank. You should come with me so that you may see how they live." My man related the story in the following words: I went along with him and we came to the home of a knight who belonged to the old category of knights who came with the early expeditions of the Franks. He had been by that time stricken off the register and exempted from service, and possessed in Antioch an estate on the income of which he lived. The knight presented an excellent table, with food extraordinarily clean and delicious. Seeing me abstaining from food, he said, "Eat, be of good cheer! I never eat Frankish dishes, but I have Egyptian women cooks and never eat except their cooking. Beside, pork never enters my home." I ate guardedly, and after that we departed.²⁴

Hygiene in the kitchen was perhaps not always high. Certainly healthy practices were not always followed. Food may in some cases not have been thoroughly cooked.²⁵ In cooking meat the Franks used a lot of

¹⁸ See Clermont-Ganneau, 1899, p. 229.

¹⁹ Bernardus Coqus and Bertrandus Coqus appear as witnesses on a grant dated 1177; see *Cart. gén. Hosp.*, no. 508; Willelmus Cocus (Guillelmus Coquus) appears as a witness on a grant dated 1180; see *Cart. gén. Hosp.*, no. 390 and the house of Robertus Coquus is recorded in Jaffa on a grant dated 1193/94 - Robertus Coquus see *RRH*, no. 709. *Cart. gén. Hosp.*, no. 954.

²⁰ On the low regard for kitchen work see Upton-Ward, no. 662.

²¹ On the importance of the cook see Upton-Ward, no. 143: "There are five sergeant brothers who should have two horses each: these are the Under-Marshal, the Standard Bearer, the Cook brother of the convent, the Furrier of the convent and the Commander of the shipyard at Acre."

²² *Ibid.*, no. 77.

²³ Theodore was a Greek commander of the municipality of Antioch.

²⁴ Usāmah Ibn Munqidh, pp. 169–70.

²⁵ In an examination of soil samples from the latrines in the Hospitaller compound in Acre evidence has been found to show that the people using the latrines suffered



Figure 38. Bread oven in house at Parva Mahumaria (photograph by author).

spices, probably in many cases to conceal that the meat had gone off.²⁶ In addition, as noted, most cooking was done in lead-glazed cooking vessels, and serving and eating vessels were also lead-glazed.

C: Bakeries

The baking of bread, as a monopolistic right of the lord, was carried out either in the local manor house or in one of the houses nearby. A fairly large vaulted bread oven was located in house 15:23 in Parva Mahumaria (Figure 38). This was directly opposite the curia and was thus under the watchful eye of the *locator*, who would be able to make

from various intestinal parasites. See P.D. Mitchell and E. Stern, 2000, "Parasitic Intestinal Helminth Ova from the Latrines of the 13th Century Crusader Hospital of St John in Acre, Israel", in M.La Verghetta and L. Capasso (eds.), *Proceedings of the 13th European Meeting of the Paleopathology Association, Chieti, Italy 2000* (Teramo: Edirafital S.p.A.), pp. 207–13.

²⁶ This is not to say that spices were used only for this purpose. Taste was of course also an issue. In the Jerusalem hospital chickens or hens were cooked "in a very good sauce, very well seasoned and done with saffron". See Edgington, 2005, pp. 28–9.

sure that it was used by all the villagers and settlers as required. In the courtyard of the castle of Arsur two large installations were uncovered on the north-east side of the courtyard. One, built of ashlar, is of polygonal shape, but round on the interior with a diameter of 3.3 m. It has a nearly intact domed ceiling and a paved floor in which is set a basalt millstone and additional basalt objects in secondary use. The interior walls were covered with fired bricks which were recovered on the floor of the installation during excavation. The excavators identified this installation as probably being in its latest use a silo. It is clear from its form that it would originally have served as a baking oven. The second installation, adjacent and to its north-east, was externally quadrangular with a round interior of 3.4 m. diameter. It contained remnants of a grain mill.

D: Dining Space in Private Houses and in the Communal Refectories

Archaeological and written sources give us some information regarding the rooms where meals were taken. Even when there is no direct evidence we can locate the dining area if there is a hall adjacent to a kitchen. This is most easily identified in the case of communal refectories in monastic houses and castles. The finest surviving example of a monastic refectory in the Kingdom of Jerusalem is that of the Hospitaller compound in Acre.²⁷ It is a remarkable structure, massively constructed with walls and piers 3 m. thick. The roofing is rib-vaulting supported on simple consuls, two of which are decorated with *fleurs-de-lis*. In Belvoir Castle the location of the refectory has generally been identified as being in the large barrel-vaulted hall running the entire length of the southern side of the inner ward, adjacent to the kitchen which was in the south-east corner.²⁸ A more recent identification has placed it in the north-eastern corner opposite the kitchen.²⁹ The large hall running the entire length of the Templar Sea

²⁷ This ground-floor hall was known for many years as the "Crypt", until the recent excavations showed that its subterranean location was the result of it having been entirely buried under sand in the early nineteenth century in order that it might be used to strengthen the foundations for the Turkish fortress of al-Jazzar. Now that it has been entirely cleared, both inside and outside, it can be better understood.

²⁸ See M. Ben Dov, "Belvoir (Kokhav Ha-Yarden)", *NEAEHL*, vol. 1, Jerusalem, 1993, p. 183.

²⁹ A signpost now placed in the castle by the Israel Parks and Gardens Authority gives this identification.

Castle at Sidon which certainly would have contained the dormitory would quite probably also have contained the refectory. At Chastiau Pelerin the structure most likely to have been the refectory is what Johns called the south-west hall.³⁰ This was a two-aisled building with a row of three small piers and one massive one supporting ten bays. To the south-east it opened onto an intermediate vault west of the refectory. Further north, on the east wall, were two broad doors. Apart from being the appropriate location, this building has been identified as the refectory and kitchens because of the presence of ovens built into its eastern wall at the northern end. Johns suggested that either the extension of this hall south and south-east or the vaults to the north could have served as the refectory. The refectory at Bethgibelin has been identified as occupying the large hall on the south-east of the inner ward.³¹ It was entered from the north and the west, and the walls of the fortification and the church could be reached by a staircase on the south. Identification of this hall as the refectory is based on the presence here of long tables formed of monolithic columns cut in half lengthways and placed on stone supports with the flat side up (Figure 39). On one of these a game of Nine-Mans' Morris was incised.

At the Judean desert monastery of St. Euthymios, which survived into the Crusader period and was probably only destroyed by Baybars in the second half of the thirteenth century, the refectory was located east of the cemetery block in an elongated hall abutting the north wall of the church, which was excavated in 1976–79. This hall measured 19 by 4.3 m. wide and was roofed with four groin-vaulted bays. Six long stone tables were found here as well as a stone bench along the western wall. As noted, a circular glass pane (24 cm. in diameter) and plaster window tracery was also found.³² A fine Gothic refectory survives in Bellapais monastery measuring 30.4 by 10.04 m. and rising to a height of 11.5 m. It is buttressed on the north and has six rib-vaulted bays supported on pilasters formed of clustered columns. On the west wall is a pointed-arch window, its tracery removed. On the east wall is a small rose window with trefoil and quatrefoil tracery. The northern wall has a window similar to that of the west wall in its easternmost

³⁰ Johns, 1997 (1), p. 60.

³¹ A. Kloner and M. Cohen, "The Crusader Fortress at Beth Guvrin", *Qadmoniot* 33.1, 119 (2000) (Hebrew), p. 35.

³² Above, p. 45 and Meimaris 1989, p. 36 and Figs. 83–85a.



Figure 39. Tables in refectory at Bethgibelin (Bait Guvrin) (courtesy of Amos Kloner and Michael Cohen).

bay. This was probably where the abbot sat during communal meals. The second bay from the east has a wall-pulpit with a highly decorated balustrade reached by a staircase in the thickness of the wall. Behind the pulpit is a small window with a trefoil head. The other bays have a second row of small rectangular windows, and similar high windows line the south wall as well as two lower windows and two doors that open onto the cloister. The kitchens are to the south-west.

E: Food and Diet

In 1120, in an attempt to accelerate Jerusalem's revival and to encourage an increase in its population, Baldwin II abolished taxes for the Latin population and for non-Latins including Muslims (not residents but apparently Muslim merchants carrying out trade in the city); he lifted the payment of duty on essential foodstuffs brought into the city such as wheat, barley, beans and any kind of legumes (lentils and chick peas).³³ We can only guess at the effectiveness of this measure

³³ WT 12.15.

but it points to the need to ensure a steady supply of basic foods to the settlers, and the inclusion of these particular items points to their importance as staple foods for the Frankish population. A steady food supply was essential for the viability of all of the Frankish settlements, and quite early on they organised a complex system of rural estate centres that served as depots and collecting points for farm produce. From there foodstuffs and other essential items were transported to the cities or to the castles to provide the needs of a garrison.

A wide range of foods was available in the Latin East. Most dietary protein came from meat, dairy products and eggs, grains and legumes. We can learn something of the types of foods entering the towns from references to the rates of taxes levied on goods passing through the royal *fonde* in Acre. Listed among other commodities are grain, carobs, grapes and wine, garlic, onions, sesame and sesame oil, olives and olive oil, butter, hens and turkeys, honey and sugar.³⁴ Other foodstuffs, local and imported, referred to in written sources include wine and olive oil, such vegetables as globe artichokes, asparagus, onions, and cabbage, and spices and herbs including pepper, coriander, cinnamon, cumin, ginger, fennel, sage, and rue.³⁵ The many different fruits recorded in the written sources include apples, pears, figs, dates lemons and bananas. Burchard of Mount Sion notes that wild game such as quail, deer and boar were hunted, domesticated animals were raised and fish were caught on the coast as well as in the Sea of Galilee and the River Jordan; possibly fish were raised in pools as well.

Cereals and Bread

Archaeological finds of grain crops include carbonised seeds from the Red Tower in the Sharon as well as wheat and barley and other grains along with the pollen of wheat, barley and rye from the latrines in Acre.³⁶ The importance of bread in the Frankish diet can be deduced from the prominence of mills and bakeries in towns, villages, castles, monasteries and estate centres. When the Italian merchant fleets made an agreement to aid the Frankish army in besieging a town, the *furnum*

³⁴ *Livre des Assises de la Cour des Bourgeois, RHC (Lois)*, vol., II, pp. 173–81.

³⁵ On the last three see Burchard, p. 86.

³⁶ Hubbard "Medieval Plant Remains", in Pringle, 1986, pp. 187–91; Mitchell, 2004, pp. 67–68.

et molendinum (ovens and mills) were specifically included among the institutions they would receive in the occupied city as a reward.³⁷ In the archives of possessions of the chapter of the Holy Sepulchre in Jerusalem is a list giving the names, and in many cases the locations, of 25 ovens belonging to canons.³⁸ The monopolistic rights of lords pertaining to these installations are recorded. Mills and ovens have been uncovered in excavations of villages, monasteries castles and manor houses.

Whereas in the East bread production was traditionally a household activity, under the Frankish settlers it came under the same organised production that existed in feudal Europe. Loaves of bread had to be a regulation size. It was the responsibility of the *methessep* (equivalent of Arab *muhtasib*), an urban official who held certain policing duties, among these was to oversee bread production in the city.³⁹ Not only the size and weight of bread was monitored but also its quality. Regulations for the Hospital in Jerusalem refer to “whitest bread” and “fine bread”.⁴⁰

Fruit, Nuts and Vegetables

The Near East was rich in fruits and although not all of the varieties available in the West were grown, there were many fruits new to the Frankish settlers, including some exotic types such as bananas. There were also dates, water melons, citrus fruit, pears, apples, cherries and nuts. Grapes were grown for eating fresh as well as dried, and of course for the manufacture of wine. Abbot Daniel referred to them as “The best of all fruit on earth...comparable to the fruit of heaven”.⁴¹ Some fruits were dried or made into preserves; Burchard refers to peach preserves made at Acre.⁴² Ambroise mentions the carob, a fruit that was of considerable use when food supplies were short:

³⁷ According to the terms of the *pactum Warmundi*, the agreement drawn up in 1123 between the Venetians and the Patriarch of Jerusalem, in exchange for the aid in taking one of the two coastal towns still held by the Muslims (Tyre and Ascalon), the Venetians would receive among other properties and privileges their own oven and mill. See WT 12.25.

³⁸ Bresc-Bautier, no. 169.

³⁹ On the duties of the *methessep* see *Les Assises de Jérusalem*, RHC (Lois), Paris 1843, vol. 2, pp. 243–44.

⁴⁰ See Edgington, 2005, pp. 28–31.

⁴¹ Daniel, pp. 26, 45, 66.

⁴² Burchard of Mount Sion, p. 87.

There was one thing for sale among the army, called 'carob-beans', which were sweet to eat and could easily be acquired for one penny... Many people were sustained by those carobs and by little nuts.⁴³

The carob was a native tree of considerable value, rich in protein, starch and sugar and a valued energy source for labour animals and cattle. It grew in many regions, along the coast and in the hinterland. Abbot Daniel mentions carobs in quantity around Jerusalem, in the Hebron hills, around Samaria and at Mt Tabor.⁴⁴

Vegetables included cabbage, onions, cucumbers and several types of legumes. The importance of legumes is witnessed by their presence not only in archaeological finds, pilgrim reports, documents (such as the above-mentioned decision of Baldwin I to lift the taxes on basic foods in Jerusalem), in the statutes of the Military Orders and also in place names (the Templar castle of La Fève/Castrum Fabe for example). Carbonised seeds from the Red Tower in the Sharon included broad beans, chick peas and lentils.⁴⁵

Spices and Herbs

Spices and herbs were commonly used by the Franks. A list of such products available in the kingdom includes pepper, cinnamon, alum, nutmeg, cloves, musk, aloe, sugar, henna, sesame, incense, cardamom, Persian gum, ginger, lavender, camphor, aspic, licorice, arsenic, frankincense and gall.⁴⁶ In Jerusalem the westernmost of the three parallel market streets built by Queen Melisende in 1152 was known as the Street of Herbs; according to the anonymous French text known as *La Citez de Hierusalem*, fruit, spices and herbs were sold on this street.⁴⁷ Usāmah refers to the usual Frankish food as including garlic and mustard.⁴⁸ Salt was sold in Acre.⁴⁹ Recent studies relating to the development of sugar refining under the Franks have enlightened us as to the

⁴³ Ambroise, p. 92.

⁴⁴ Daniel, pp. 45, 58, 66.

⁴⁵ R.N.L.B. Hubbard and J. McKay, "Medieval Plant Remains", in Pringle, 1986, pp. 187–91.

⁴⁶ See S.J. Alled and E. Amt (eds.) *The Crusades. A Reader*, Toronto, 2003, pp. 95–99.

⁴⁷ *La Citez de Jherusalem*, pp. 6–7.

⁴⁸ Usāmah Ibn Munqidh, p. 162.

⁴⁹ *Livre des Assises de la Cour des Bourgeois*, chap. 243, no. 5.

technology of this important new industry.⁵⁰ Burchard described the process thus:

The canes are gathered, cut in lengths of half a palm, and so are crushed in the press. The juice squeezed out of them is boiled in copper boilers, and, when thickened, is collected in baskets made of slender twigs. Soon after this it becomes dry and hard, and this is how sugar is made.⁵¹

This fairly basic description does not illustrate the high technological achievement that this industry had attained by the thirteenth century. Fortunately we are well informed by a wealth of archaeological evidence from the kingdoms of Jerusalem and Cyprus.

Honey and Beeswax

Honey was available in many regions. In Cyprus bees were raised in hollows in the walls of houses.⁵² Good honey supplies came from the hilly regions of Judea and Samaria and the Galilee, and in the Middle Ages honey from the Holy Land was exported to Egypt.⁵³ Beeswax was a valuable byproduct of bee-keeping and under the Franks with their numerous churches there must have been an increase in the demand for wax candles. In Jerusalem there was a special market selling candles located near the Church of the Holy Sepulchre.⁵⁴

Fish, Meat, Fowl and Eggs

Although fresh and saltwater fish were readily obtainable it appears that the Franks at times also imported salted fish from Egypt.⁵⁵ Abbot Daniel recorded a carp-like fish that he often ate while staying in Tiberias.⁵⁶ Al-Idrisi mentioned that the people of Sidon ate what he referred to as small fish; but from his description these were apparently salamanders. These creatures lived in the town spring and according to al-Idrisi were about the length of a finger and in the form of a gecko lizard with small legs. They were eaten raw or dried and he states that

⁵⁰ A. Peled *The Cane Sugar Industry in the Land of Israel during the Crusader Period*, unpublished PhD dissertation, Bar Ilan University, Ramat Gan, 2002; E.J. Stern, *The Sugar Industry in Palestine during the Crusader, Ayyubid and Mamluk Periods in Light of the Archaeological Finds*, unpublished MA thesis, University of Haifa, 1999.

⁵¹ *Ibid.*, p. 99.

⁵² Richard, 1985, p. 280.

⁵³ Goitein, 1967, p. 125.

⁵⁴ *La Cité de Jérusalem*, p. 18.

⁵⁵ *Livre des Assises de la Cour des Bourgeois*, ch. 242, no. 19.

⁵⁶ Daniel, p. 62.



Figure 40. Chicken coop at Har Hozevim (courtesy of Natasha May, IAA).

it is advisable to drink water after consuming them. He refers to their strong aphrodisiac effect which enables a man to “enjoy women as much as he will without suffering from exhaustion or debility”.⁵⁷ Fish were not only consumed in seaside towns. Jerusalem had a fish market at the top of the market that sold fruit and herbs in front of the Syrian exchange.⁵⁸ Shellfish and crab remains are occasionally found in archaeological finds.⁵⁹

Chicken seems to have been a common food in the Latin East. A *casal* near Acre specialized in rearing chickens.⁶⁰ In the Arsenal Bible which was illuminated Acre in the mid-13th century is an illustration of a table on which can be seen whole chickens in bowls.⁶¹ Archaeological evidence for raising chickens comes from Har Hozevim, where a chicken coop was excavated in the northern courtyard. It was a roughly constructed stone structure measuring c. 3.5 by 6 m. with a row of eight small rectangular niches in the northern wall (Figure 40). On the wall beside one of these niches was a bent nail probably intended to

⁵⁷ Le Strange, 1890, p. 347.

⁵⁸ *La Cité de Jérusalem*, pp. 7, 18.

⁵⁹ Crab remains were found on the floor of the bread oven at Vadum Jacob.

⁶⁰ J. Riley-Smith, *The Knights of St. John*, Cambridge, 1964, p. 309, n. 2.

⁶¹ Buchthal, 1957, Plate 81.

close a wooden or wood-and-wire cover. Chicken bones were among the faunal remains from this site.⁶² Additional evidence for raising chickens and chicken consumption comes from Baisan (Beth She'an) where, adjacent to the southern wall of the tower within its surrounding courtyard, a pit filled with a large amount of chicken bones was uncovered. Clearly chicken formed a considerable part of the diet of the knights garrisoned here. The Hospitallers had a poultry store and served fried, baked or poached eggs.⁶³ In Jerusalem there was a market specializing in cheese chickens and eggs.⁶⁴ Unaware of the dangers of a high cholesterol diet, the sick in the Jerusalem hospital were permitted four boiled eggs.⁶⁵

Every Frankish city would have had a cattle market, piggery and butchers. In Jerusalem the butchers were located on Temple Street, the main east-west road at the heart of the city.⁶⁶ The cattle market was in the south-east near the southern wall and there was a piggery in the Patriarch's quarter to the north-west. In Acre the cattle market may have been the *boverel* in the west of the city near the shore.⁶⁷ A reference to the Street of the Butchers shows that it was located alongside the shore. It is recorded in the History of Philip of Novara that when Frederick II left Acre his ship was pelted by butchers and residents of the Street of Butchers with tripe and bits of meat.⁶⁸ The Genoese in Acre had a piggery as did the Hospitallers.⁶⁹

By examining references to the eating of meat in the monasteries and Military Orders we can gain an idea of how it was regarded among the Frankish populace at large. The Templars were permitted meat three times a week. If three meat meals a week for the brethren of religious communities was considered reasonable in spite of the fact that it was understood that "...the custom of eating flesh corrupts the body", we might infer from this that some members of the lay com-

⁶² N. May, 2000, p. 43; Kletter and Boas, 2002, p. 203.

⁶³ See King, no. 98, p. 179.

⁶⁴ *La Cité de Jherusalem*, p. 7.

⁶⁵ Edgington, 2005, pp. 30–31.

⁶⁶ See Boas, 2001, p. 145.

⁶⁷ A recent proposal is that this was in fact the Templars' stables for warhorses. Jacoby, 2005, p. 77. However, being on the edge of the city, there is no reason to rule out the identification of this area as the cattle market, even within the urban context.

⁶⁸ E. Peters (ed.), *Christian Society and the Crusades 1198–1229*, University of Pennsylvania, 1971, p. 160.

⁶⁹ Desimoni, pp. 217–19 and *Cart. gén. Hosp.*, no. 3396.

munity ate meat at least as often if not more often than that.⁷⁰ To date, the published archaeological information for animal bones found in Frankish excavations is not substantial enough to allow any conclusions to be drawn.⁷¹

F: *Making, Storing and Drinking Wine*

If wine manufacture never entirely died out (there was always a certain Christian market) it clearly declined greatly following the Muslim conquest. But under the Franks the wine industry revived and good-quality wines were produced in the Kingdom of Jerusalem and in the northern states as well. Burchard of Mount Sion described the wine of the Holy Land as “very good and noble, especially round about Bethlehem”, near where there was a village called Bezek that produced excellent wine.⁷² Archaeological finds show that wine was produced in quantity by the villages around Jerusalem such as (Parva

⁷⁰ A statute of the Primitive Rule records that it should be sufficient to eat meat only on Sundays, Tuesdays and Thursdays. See Upton-Ward, Primitive Rule statute 26. It seems that the deprivation of the brothers at times when they were not able to eat meat was so hard that this statute goes on to say that—“If a fast when meat must be forgone falls on a Tuesday, the next day let it be given to the brothers in plenty” and perhaps to help the brothers recover from meatless Fridays during Lent they together with the chaplains and clerks could have two meat meals on Sundays.

⁷¹ In Frankish loci at Belmont Castle 37.3% of the animal bones were of sheep or goat, 34.4% were of pig and 27.0% of cattle. The remainder of the bones was of horse, camel, fallow deer and fox. (The estimated meat supplied by the main animals was 72.4% by the cattle, 14.8% pig and 12.8% by the sheep and goats.) See P. Croft, “The Faunal Remains” in R. Harper and D. Pringle (eds.), *Belmont Castle. The Excavation of a Crusader Stronghold in the Kingdom of Jerusalem*, Oxford, 2000, pp. 174–75. From the excavations of the Red Tower in the Sharon Plain carried out by the British School of Archaeology in Jerusalem bone fragments from the two phases of tower included 24 fragments from sheep and goats, 49 pig bones, six cattle bones, 123 bird bones—mainly domestic geese, two cat bones and seven dog bones. See J. Cartledge, “Faunal Remains” in Pringle, 1986, p. 177. At the farmhouse of Har Hozevim near Jerusalem in the first season of excavations two rib fragments, one proximal rib and one upper left burnt third molar of a sheep or goat, one metacarpal shaft of a goat, one ulna shaft and one complete humerus of a chicken were found. See L. Kolska-Horwitz, “Animal Remains” in Kletter and Boas, 2002, pp. 202–3. At Vadum Jacob the bones of wild boar, and cattle were recovered within the castle but these finds have not yet been published. A contemporary assemblage found in medieval loci in the Armenian Garden on the Western Hill of Jerusalem included 26 sheep/goat, one fish bone (vertebral centrum of a percoid), at least three chickens, one duck and a pigeon. See C. Grigson, Appendix III: “The Animal Remains from the Armenian Garden” in A.D. Tushingham (ed.), *Excavations in Jerusalem 1961–67*, vol. 1, Toronto, 1985, pp. 252–56.

⁷² Burchard, p. 79.

Mahumaria (al-Qubaiba) and al-Kurum.⁷³ Burchard wrote of the wine grown around Sidon and north along the coast as far as Margat.⁷⁴ He described an interesting method of cultivation carried out at Antaradus where in a single year three crops of grapes were harvested. According to this account, once the bunches had begun to form in March, the vine dressers cut off all that remained of the branch beyond those bunches. By April new branches would have sprouted and with them new bunches of grapes. Then they again cut off all of the section of branch beyond these new bunches. In May the trunk put forth yet another branch with bunches and by this means, he informs us, they produced three sets of grapes in a single year, each set harvested separately.⁷⁵ Together with its own production the Kingdom of Jerusalem was also importing wine from the other Frankish states. The tariff at the *fonde* in Acre included, alongside wines from Nazareth, Saphorie and Safran,⁷⁶ imports from Antioch and Latakia (Liche) and even from Muslim territories.⁷⁷ Cyprus also continued to manufacture fine-quality wines, and Wilbrand of Oldenburg who visited the island in 1212 wrote that its wines were “so thick and rich as if meant to be consumed like honey on bread”.⁷⁸ Indeed, in 1213 the poet Henri d’Angeli noted in his famous work, *La bataille des vins*, that during a great competition of wines from all over the world organised by Philippe Auguste of France, the sweet wine of Cyprus won the overall tasting.⁷⁹

Wine could be purchased in taverns or directly from the merchant for home consumption. Usāmah records that in Nablus when a merchant wished to sell wine he opened the cask and a messenger would fill a bottle from it and go around advertising the fresh product by shouting: “So and so the merchant has just opened a cask full of this wine. He who wants to buy some of it will find it in such and such a place.” Two taverns (*taberna*) are illustrated on the Uppsala Map of Jerusalem, one at the junction of David Street and the Street of Mount Zion and the other near Mount Zion Gate. No doubt there

⁷³ See below, pp. 152–54 for a description of the wine presses in these villages. The name al-Kurum—“the vineyard”—may have originated in this period.

⁷⁴ Burchard, p. 88.

⁷⁵ *Ibid.*, 1896, pp. 101–102.

⁷⁶ *Safran* or *Le Safran* is Shefar’am, north-east of Haifa.

⁷⁷ *Livre des Assises de la Cour des Bourgeois*, ch. 242, nos. 56, 60, ch. 243, no. 15.

⁷⁸ Wilbrand of Oldenburg, p. 180.

⁷⁹ See Alain Corbellari *Les Dits d’Henri d’Andeli* Champion Paris 2003; Hugh Johnson, *Vintage: The Story of Wine*, New York, 1989, p. 122.

were many of these institutions in the large cities. Not surprisingly, they were sometimes places of ill repute. The shop in the Street of the Furriers in Jerusalem where in 1133 Count Hugh of Jaffa was stabbed while playing dice was probably a tavern.⁸⁰ Among the *Geniza* papers is a Crusader period reference to shellfish gatherers from Alexandria being reproved for drinking beer in a tavern of bad repute in Acre.⁸¹ According to Ibn al-Furāt, in 1268 Baybars refused to grant Guy, the lord of Jaffa, a truce because, among other reasons, the people of Jaffa had set up a tavern and “put a number of Muslim women into it”.⁸² Jacques de Vitry noted that the Franks liked to drink their wine chilled:

All through the summer...cold snow is brought down to Jerusalem in two or more days' journey from Lebanon, which, when mixed with wine, makes it as cold as ice. This snow is preserved by being covered with straw.⁸³

A statute of the Hospitaller Rule states that in the infirmary wine might be improved in order to strengthen the sick brothers.⁸⁴ Just what this meant is unclear; possibly that poor wine should be replaced, but it seems that, as in the Roman period, wine was often diluted with water. On this John of Joinville wrote:

I used to buy a good hundred barrels of wine, and always had the best drunk first. I had wine mixed with water issued to my servants, and gave the same to my squires, but with a lesser proportion of water. At my own table a large flask of wine and a bottle containing water were placed before each of the knights, so that he might mix his drink as he wished.⁸⁵

From these sources we learn that as in Europe, wine was prepared in barrels or casks. For domestic use it was stored in ceramic amphorae or in casks.⁸⁶ Not only was wine available but also beer, which could

⁸⁰ WT 14.18.

⁸¹ Goitein, 1983, p. 261.

⁸² See Ayyubids, *Mamlukes and Crusaders, Selections from the Tārīkh al-Duwal wa'l Mulūk of Ibn al-Furāt*, text and trans. U. and M.C. Lyons, Cambridge, 1971, p. 108, n. 1.

⁸³ Jacques de Vitry, p. 92.

⁸⁴ King, p. 42.

⁸⁵ John of Joinville, p. 291.

⁸⁶ On these amphorae see Avissar and Stern 2005, pp. 105–7, Plate 29. From Ambr-
oise we learn that people kept wine stored in their houses. When Saladin assaulted

be purchased in taverns. White beer of the Egyptian type (*mizr* made from wheat) was brewed in Acre.⁸⁷

G: Food in the Houses of the Military Orders

In the Hospitaller Order the Grand Commander among his other responsibilities had overall charge of the food store. Below him, the Petty Commander or Commander of the Vault was in charge of storing and issuing foodstuffs. The Templar Commander of Victuals was responsible for distributing the food among the brothers of that Order. An attempt was made to do this as fairly as possible. Thus, according to the Rule, he would divide the meat among the brothers in such a way that no two pieces of meat from the same place (shoulder, haunch), were given to any one brother.⁸⁸

In the “vault”, as the Hospitaller Order’s warehouse was called, imperishable foods such as salted meat and cheese were among the items stored. The Grand Commander was in charge of the piggery, the hay or oil store, the beef store and the poultry store. Grain and wine were the department of other officers below him. Monthly accounts of the foodstuffs were kept by the brother of the kitchen.

The Hospitaller Rule records that in the infirmary the sick had to be fed before the brothers and that they received fresh meat dishes three days a week. A thirteenth century statute records that food for the infirmary was the same as for the convent.⁸⁹ White bread was provided for the poor and sick in the Hospital. As for the brothers, with some exceptions, all were to receive the same type and quality of food and drink. However, there was a certain leniency which allowed for some members to receive special foods if necessary. For example, if fried eggs were being served but any brother could not eat them, he could have baked or poached eggs instead. The quality of the food served may have differed from convent to convent but in general was probably of a fairly high standard. A clause in a statute of the Hospitallers stated that: “The food and drink should be sufficiently good, according to the

Jaffa during the Third Crusade his men entered the houses of the Franks and let the wine flow out into the streets. See Ambroise, 2003, p. 176.

⁸⁷ Goitein, 1983, p. 261.

⁸⁸ Upton-Ward, no. 151.

⁸⁹ King, p. 42.

ability of the House, so that the brethren can and should tolerate and endure it.”⁹⁰ On Sunday, Tuesday, and Thursday, the brothers were given meat, the other days they ate cheese and eggs and on Friday, fish. Meat was permitted on Christmas Day whatever day it fell, even on a Friday.⁹¹ Each brother received the same food but in a quantity according to his status and needs. They ate in pairs but were given separate portions of vegetables and drinks, eating in silence. They had to remain at the table to the end of the meal.

H: *Eating Utensils*

One of the aspects of domestic life about which archaeology provides us with abundant information is that regarding the ceramic eating vessels and to a lesser extent those of glass. Excavations of private houses as well as of communal buildings have provided large assemblages of such wares and over the past decades a number of useful studies have been carried out that enable us to get a fairly good idea of how a set table at mealtime in a Frankish house would have appeared.⁹²

a) *Table Ware*

The Franks arrived in the East at a time when the art of ceramic manufacture was enjoying a peak that has rarely been equalled. The revolution in ceramics that had begun with the widespread introduction of glazing in the Islamic world in the ninth century had completely changed the face of the potter's craft and had brought into the private home, even the home of the simplest peasant, highly attractive, functional and well-manufactured decorated vessels. By comparison, in most contemporary European countries the ceramic wares appeared comparatively primitive, although this was shortly to change as the influence of Islamic art and technology spread in the West, in no small part due to the activities of the Italian merchants in the Levant.

⁹⁰ Ibid., p. 47, no. 8.

⁹¹ On the Templar rules regarding meals see Upton-Ward, nos. 23–29 and nos. 182–89, For the Teutonic Rule see I. Sterns, *The Statutes of the Teutonic Knights: A Study of Religious Chivalry*, unpublished PhD dissertation, University of Pennsylvania, 1969.

⁹² The best available summary for ceramics is Avissar and Stern, 2005. See also Stern, 1999, pp. 259–65; Boas 1999, pp. 143–50.

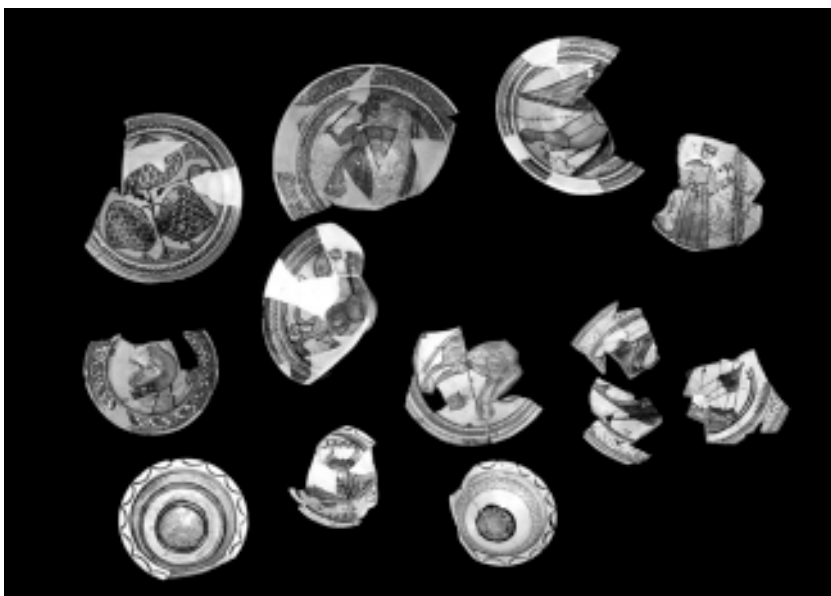


Figure 41. Glazed ceramic tableware from Acre (photograph by Clara Amit, courtesy of Edna Stern, IAA).

Along with cooking and storage vessels, the Franks, like the rest of the population in the region, made use of the locally manufactured table ware and that manufactured in neighbouring Egypt and Syria. In addition, they imported vessels manufactured in the Byzantine Empire, from the Aegean region, and in the thirteenth century began increasingly to import vessels from southern Italy (Figure 41), Cyprus and Antioch's port, al-Mina. These imports may have been considerably more expensive than local glazed wares (Pringle notes the 25% customs tax imposed on imported pottery at the royal *fonde* at Acre in the thirteenth century)⁹³ but apparently were not prohibitive for the general population, and examples of imported ceramics are found in the ceramic assemblages of most Frankish sites, urban and rural.⁹⁴

⁹³ D. Pringle, "Pottery as Evidence for Trade in the Crusader States", in G. Airaldi and B.Z. Kedar (eds.), *I comuni italiani nel regno crociato di Gerusalemme*, Genova, 1986, p. 461.

⁹⁴ For example Twelfth Century Byzantine Ware, Early Thirteenth Century Aegean Ware, Zeuxippus Ware, Port St Symeon Ware, Cypriot Ware, North African Ware and Proto-Maiolica from La Hadia (E.J. Stern and A. Tatcher in N. Getzov, in preparation).

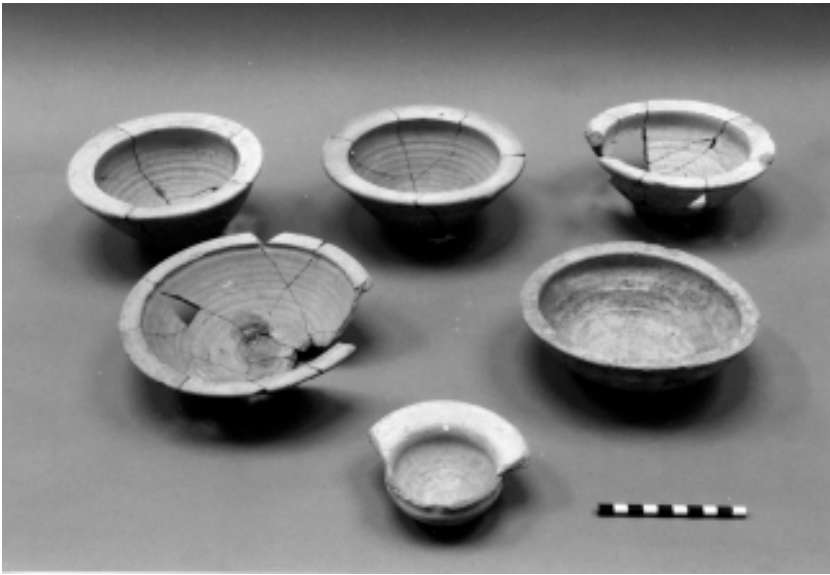


Figure 42. 'Akko' Bowls (photograph for author by Buki Boaz).

Some fine porcelain ware from China also found its way, most likely through Egypt, into the houses of better-off Franks and the houses of the Military Orders.⁹⁵ The imported ware covered a range of forms and functions, but mainly consisted of bowls, plates and jugs decorated with lead glaze, tin-opacified lead glaze or alkaline glaze.

In monastic houses and in the houses of the Military Orders a more simple type of ceramic ware was to be found. This consisted of simple, coarse, undecorated bowls and jugs which have recently been given the name of 'Akko' Ware because of the large number of finds from sites in that city (Figure 42). However they have also been found at Chastiau Pelerin ('Atlit Castle), Manueth (Horvat Manot) and La Hadia (Horvat Uza). Wooden bowls were also used, and bowls made of horn are mentioned in the Templar Rule.⁹⁶

Probably in most houses except for those of the very poor there were also glass vessels. Glass manufacture had also achieved a high

⁹⁵ For example see celadon bowls from the Hospitaller compound in Acre, Avissar and Stern, 2005, pp. 78–80, 133, Fig. 34.1–3, Plate 24.6; and a celadon bowl, a stone-ware bowl and blue and white Ming porcelain bowl from the Templar castle of Safed, *Ibid.*, pp. 78–80, 133, Fig. 34.4, 5, Plate 24.7, 8.

⁹⁶ Upton-Ward, no. 140.

level of development under Islam, and the presence of the Franks in the twelfth and thirteenth centuries gave it, like ceramics, a new and distinctive direction. Imported and locally produced glassware is found in Frankish assemblages. Vessels were manufactured in the region of Acre-Tyre but also further north—at Beirut for example, which was well-known for its red laminated glass—and as far north as Antioch.⁹⁷ Glass was also imported from Egypt and Syria and some glass was also imported from the West. Bi-conical goblets found in excavations at Caymont and Chastiau Pelerin may have been manufactured in France, and some fragments of the enamelled beakers known in the past as Syro-Frankish beakers but of uncertain origin have been found.⁹⁸ The Templar Rule refers to sets of goblets.⁹⁹ In addition to this finer ware a large quantity of fine glass vessels of local manufacture were available and were purchased by Franks in the East. These included high-neck flasks mentioned by al-Idrisi,¹⁰⁰ conical beakers for drinking wine with high-kicked bases¹⁰¹ and beakers with prunting (small pointed protrusions on the exterior).¹⁰² These latter vessels have been securely identified as being of local manufacture by the discovery of a glass workshop on the coastal road north of Acre at Somelaria.¹⁰³

b) *Cutlery*

Spoons and knives were basic items of tableware among the Franks.¹⁰⁴ The personal equipment of a Templar brother included a bread knife and a spoon.¹⁰⁵ In excavations metal knives have been found at Belvoir, Vadum Jacob, the farmhouse at Har Hozevim and the village at al-

⁹⁷ Adler, 1907, pp. 16, 18.

⁹⁸ See A. Lester, "The Glass from Yoque'am: The Early Islamic, Crusader and Mamluk Periods", in Ben-Tor et al., 1996, p. 214, Fig. XVII.16 and I. Krueger, "A Second Aldrevandin Beaker and an Update on a Group of Enamelled Beakers", *Journal of Glass Studies* 44 (2002), p. 118.

⁹⁹ These were possibly used as a game. See Upton-Ward, nos. 608, 608.1.

¹⁰⁰ Le Strange 1890, p. 344.

¹⁰¹ See for example those from al-Qubaiba, Bagatti, 1993, p. 164, Fig. 35, Plate 29 (photo 63).

¹⁰² Prunted beakers have been found at Montfort, Dean, 1927, p. 4P, Fig. 56F; Acre, Y. Gorin-Rosen, "The Courthouse Site, Area TA: Medieval Glass Vessels", *Atiqot* 31 (1997), pp. 82–84 and possibly at Bessan, see Boas, 1999, p. 153, Plate 6.4.

¹⁰³ G.D. Weinberg, "A Glass Factory of Crusader Times in Northern Israel (Preliminary report)", *Annales du 10e Congrès de l'Association internationale pour l'Histoire du Verre, Madrid-Ségovie, 23–28 septembre 1985*, Amsterdam, pp. 305–17.

¹⁰⁴ The fork as a table implement was a fairly recent introduction in the West.

¹⁰⁵ Upton-Ward, nos. 138, 140.

Kurum.¹⁰⁶ The spoon was often made of wood or horn.¹⁰⁷ Because of its perishable nature wooden spoons are understandably rare finds in excavations. However, three medieval examples have been found; rat-tail spoons (spoons with handles that extend like a tail under the bowl) that were recovered in the 1926 excavations at Montfort.¹⁰⁸ The most complete example is c. 14 cm. long (originally somewhat longer, as part of the handle is missing) with a slender, curved handle extending across the back of the bowl.

¹⁰⁶ For a photograph of knives from Vadum Jacob see Rozenberg, 1999, p. 248, Plate 12, and drawing in Boas, 1999, p. 164, Fig. 6.2, nos. 2,3.

¹⁰⁷ Etymologically, the English word *spoon* derives from the Old English *spōn* meaning a chip of wood or horn.

¹⁰⁸ Dean, 1927, p. 39, Fig. 54, D.

CHAPTER SIX

DOMESTIC WORK AND WORKSPACE

More so than today the place of employment in the Middle Ages was often attached to or within the dwelling house. Many occupations were carried on in workshops and shops facing the street and in courtyards. Professions ranged from all types of shopkeepers and stall-holders, including money-changers and money-lenders, to cooks, butchers, bakers, tavern owners, potters, smiths, cooking-pot makers, goldsmiths, cobblers, tailors, drapers, dressmakers, flax dealers and rope makers.

A: Shops and Workshops

Whereas today's shops generally deal in retail trade, in the Middle Ages it was more typical to find shops and manufacturing workshops combined in a single space, that is, the goods were manufactured and sold on the same premises and by the same people. Almost always these combined shops/workshops were located in the front rooms of private houses facing the street, with the living quarters located either in the rear or on upper floors. In Frankish towns there were not only individual shops in private dwellings but also streets built specifically for commerce as market streets or bazaars, but even in the latter the shopkeeper's dwelling was often in the same building. In Jerusalem, because of their continuous importance in the life of the city (and because the Frankish buildings were well-constructed and have withstood the ravages of time) a number of medieval market streets have survived. Examples can be seen in David Street, Temple Street, the Street of Mount Zion, the Triple Market Street and the Cotton Market. In addition, a number of private dwellings survive (usually in a state of ruin) that have shops on the ground-floor level. One such example is a building on the Street of Mount Zion¹ that had three shops on the ground floor facing the street covered with barrel vaults, the entire

¹ See above, pp. 84–6.

structure covering an area of 126 square m. Each shop measured 2 by 7 m. and thus constituted a very confined work-space, but this was not exceptional in Middle Eastern bazaar-type market shops. The level of the shop front is 83 cm. above the level of the Frankish street. This elevation can be understood if we imagine these shops fronted with platforms for displaying merchandise. Such platforms were a common element in medieval bazaars and can be seen in old illustrations of market streets in Jerusalem.² They constituted a simple and useful means of extending the workspace, albeit at the expense of traffic space on the street itself.

Houses in every quarter of Acre had shops on the ground floor level and a number of these can still be observed. Several houses of the burgrave plot type located on a street running north-south on the western side of the city had small rooms opening directly onto the street. House 1:2, with two groin-vaulted rooms either side of an open courtyard, is an example of this type, falling into what Kesten called the "terrace-type" house—"small units built in a row, the façade usually formed by a single a room, and the partition walls shared by the houses they separate".³ The front room facing the street would have served as the shop, the room beyond the courtyard as living quarters.

Shops can be observed in some courtyard houses. In the Genoese quarter in Acre there is a house (house 1:20) which opens directly onto the covered street that crosses the quarter. This street has been tentatively identified as a market street.⁴ On the ground floor of the house to the north of the courtyard there is a hall measuring over 15.7 by 4.4 m. which opens onto the street via a large arched opening, 3 m. wide, clearly indicating the commercial function of this level. Houses with broad openings to the street that may well have been shop fronts were among the twelfth and thirteenth century houses recently excavated in the north-east of the city within the Turkish walls. One of these

² See J.E. Hanauer, *Walks About Jerusalem*, London, 1910, p. 85. These benches or *mastabas* were removed in 1863–64 when the streets were repaved. See his description of the shop openings (pp. 44–5) which were similar to shops in the medieval West where constructed platforms or wooden benches were typical in many regions, for example in medieval shops in the *Stradetta* in Spoleto, Italy or in Cluny, France where the lower part of wooden shutters opened out to form tables. On the latter see the reconstruction of such a shop in a house on 23 rue Filaterie in Grandchamp et al., 1997, p. 143, Fig. 122.

³ Kesten, 1962, p. 16.

⁴ On this street see Kedar and Stern, 1995, pp. 105–11.



Figure 43. House excavated in north-eastern Acre (photograph by Howard Smithline, courtesy of Danny Syon, IAA).

had two broad doors from the street leading to what was originally an open area, later roofed over, that may possibly have served as a work area and shop (Figure 43). The 1244 property list of the Venetian commune in Acre refers to the location of shops and benches on the ground floors of apartment buildings.⁵ In Caesarea the ground level vault of the large vaulted house in the northern part of the city would probably have served as a combined shop, storage and workshop for the merchant who occupied the apartments on the floor above. This vault, which measures 7.5 by 20 m., is described above.⁶

Shops could be quite small or quite large depending on their location, ownership and use. In the triple market in Jerusalem the shops were no more than a few metres in width and depth, although, as noted, this small space could be extended with a raised bench extending out into the street. In the covered market street in the Genoese quarter in Acre the shops (if indeed these were shops) were hardly more than cupboard niches along the sides of the street. On the other hand the shops in the market street on the Street of Mount Zion in Jerusalem

⁵ Regarding the value of such shops see below, pp. 236–37.

⁶ See above, pp. 300–302.

were quite large, those on the western side measuring on average 3.5 by 11 m. and those on the east 4 by 4 m. and the Hospitallers' shops on David Street averaged 7.5 by 20 m. Obviously the smaller shops in the bazaars would have served only for retail activities whereas large shops like those of the Italian merchants on the ground floors of their palaces in Acre and Tyre, and the large vaults of the Hospitallers on David Street in Jerusalem would certainly have been used for storage and as workshops for the manufacture of the goods sold in them.

Smithies were important businesses in medieval towns and villages. Archaeological evidence for ironmongers and forges is fairly limited, coming mainly from castles like Belvoir and Saranda Kolones. They certainly existed in most or indeed all urban and rural settlements for the manufacture and repair of tools, weapons and household utensils. Iron cooking pots may have been manufactured in Acre in the Street of Cooking Pot Makers (*Ruga Calderariorum*) located in Montmusard, perhaps in a workshop in the house of one Hugo de Calderaria.⁷ Gold- and silver-smiths occupied shops in the town centres. In Jerusalem the gold-smiths were located near the market streets and the Church of the Holy Sepulchre.⁸ They manufactured keepsakes for pilgrims such as pendant crosses, jewellery, liturgical objects, reliquaries and probably more mundane items for the local community. In a recently excavated residential area of Acre a workshop was found that manufactured lead-alloy ampullae for pilgrims.⁹ The workshop was apparently located in a second-storey room.

B: *Industries*

Several rural industries were located within or adjacent to living quarters. Wine and oil installations have been found on the ground-floor levels of private houses and farmhouses, Sugar refineries were located in rural estate buildings with adjacent domestic apartments, and the same is quite probably the case with most other medieval industries.

Wine was manufactured in villages, and presses are found in a number of rural houses in two of the street-villages near Jerusalem, al-Qubaiba and al-Kurum, and in one of the vaults in the estate centre

⁷ Strehlke, no. 92.

⁸ Shirley, p. 15; Boas, 2001, p. 166.

⁹ D. Syon, "Souvenirs from the Holy Land: A Crusader Workshop of Lead Ampullae from Acre", in Rozenberg, 1999, pp. 111–15.



Figure 44. Wine press in house in Parva Mahumaria (photograph by author).

at ar-Ram as well as in the central ward of the castle of Montfort. These presses consisted of rectangular treading vats with pipes opening onto collecting tanks. The vats were covered with hydraulic plaster. Presses at Parva Mahumaria (al-Qubaiba) and al-Kurum measure on average 1.5 by 1.5 m. and are about the same in height (Figure 44). They have stone pipes to carry the grape juice into the collecting vats,



Figure 45. Flour mill at Har Hozevim (courtesy of Yehiel Zelinger).

which were sometimes constructed but usually cut into the bedrock. The location of these installations inside buildings rather than in the open as was usual in the East in other periods, would seem to demonstrate the introduction of Western custom by these Western immigrant settlers.

Oil presses have also been found on a number of Frankish rural sites. At Clepsta (Lifta), a small Frankish village west of Jerusalem, oil presses are located in a complex of medieval structures that apparently formed part of a farmhouse or estate administrative centre in the heart of the village. A number of oil presses were found during the excavations of al-Qubaiba. One example is the upper stone of a press.¹⁰ It had a square hole for a wooden shaft right through it (14 by 14 cm.). The stone is 137 cm. in diameter and 37 cm. high. The base stone of another oil press is 148 cm. in diameter with a hole at the centre 15 by 15 cm. and 13 cm.¹¹ deep—but not right through as the stone is 50 cm. high. In the street-village at al-Haramiya both the base and the grinding stone have a square hole for the shaft (Figure 45). At Aqua

¹⁰ Bagatti, 1993, p. 169 and Plate 11, photo 19.3.

¹¹ Ibid., photo 19.4.

Bella in the ground floor vault of the south wing are the remains of an oil press, a large millstone and a niche in the east wall into which the beam of a screw-press was inserted. At Jifna are the remains of an oil press in the medieval vault known as al-Babariyya.¹²

One of the most important industries in the Latin East was the manufacture of sugar. A sugar refinery was recorded in Acre, perhaps on the outskirts or outside the walls.¹³ A large number of sugar refineries have been identified in the Kingdom of Jerusalem, notably in the coastal region and in the Jordan Valley, and in southern Cyprus in areas where there was a good supply of the water necessary for growing the cane and powering the mills. The sugar refinery at Manueth (Horvat Manot) appears to have been located in a building we would define as a rural estate centre, on the ground floor of a two-storey vaulted building that quite possibly had a first-floor hall for its domestic apartment.

Soap manufacture was also an important industry and there were probably soap factories in a number of coastal towns. They are recorded at Tripoli,¹⁴ and according to the Genoese property list dated 1249 a house in the Genoese quarter of Acre had formerly belonged to *sabonerii*—soap manufacturers, though we can only speculate as to whether the industry was located in the house they occupied.¹⁵ This was in the Via Cooperta, the principal thoroughfare of Acre's Genoese quarter that ran east from the Church of St. Lawrence (San Lorenzo). There are no identifiable remains of soap factories of the period, but in the sandy area along the coast of the Acre plain small bushes grew that provided a necessary ingredient for the manufacture of soap—*salsola soda* (prickly saltwort) and *salsola kali* (opposite leaved saltwort). *Salsola soda*, a succulent annual, was of particularly great value as a source of soda ash, an alkali material used in this industry as well as in glassmaking.¹⁶ As noted, glass was manufactured in the coastal

¹² Benvenisti, 1982, pp. 146–47.

¹³ Lyons and Jackson, 1982, p. 267.

¹⁴ *Cart. gén. Hosp.*, nos. 2002 and 2280.

¹⁵ See Desimoni, pp. 217, 220. In the Ottoman period a soap factory occupied the ruin of a Frankish palace now known as Khammar House in the north of the old city (personal communication, R. Beeri).

¹⁶ See Eliyahu Ashtor and Guidobaldi Cevdalli, "Levantine Alkali Ashes and European Industries", *Journal of European Economic History* 12 (1983), pp. 494–95, 497–501. The ash was used for washing, laundry and medical purposes. See also E. Lev and Z. Amar, *Practical Materia Medica of the Medieval Eastern Mediterranean according to the Cairo Genizah*, Leiden, Boston, 2008, pp. 251–53 and n. 1229. From

region, in particular between Acre and Tyre but further north as well.¹⁷ The glass workshop at Somelaria (es-Samariya), 6 km. north of Acre, may have been typical of such small-scale industries producing goods to be retailed at distant venues throughout the kingdom and beyond. The excavated installation apparently operated in the thirteenth century, manufacturing bottles and beakers. It consisted of a single brick furnace with two firing chambers and a tank for re-melting glass that measured 40 by 50 cm. and had a capacity of about 100 kg. It was located within a few metres of a rural estate centre occupied by the Templars.

Potteries would probably have been situated outside built-up areas because of the smoke and the need for an open area for clay settling pools, although a medieval kiln was located in the heart of Jerusalem in a vault excavated on the Street of the Valley where it enters the passage under the bridge on Temple Street.¹⁸ A kiln was located in the compound of the Premonstratensian monastery of St. Samuel at Nebi Samwil.¹⁹ In Caesarea a shop with ceramic cooking pots was found in excavations just inside the south gate near the Church of St. Peter.²⁰

Textiles were manufactured in urban workshops in Tripoli, Tyre, Gaza and Ascalon. Tripoli, according to Burchard of Mount Sion, had 4,000 weavers.²¹ Tyre was most famous for its dye works. According to the Jewish traveller Benjamin of Tudela, in Jerusalem a number of Jews were employed in the dyeing of cloth.²² He refers to their being located in the vicinity of the citadel.

The tanning industry was one that produced unpleasant odours and considerable waste; consequently it was assigned to areas on the outskirts of settlements. In Jerusalem it was in the south of the city on the slopes leading to the Kidron Valley, down which waste products could be disposed of and adjacent to the Tanners' Gate, through which access to water was available from the Siloam pool. Excavations within

the thirteenth century, ash used in glass manufacture in Italy was known as "cenere di soria—Cinders of Syria". See R.B. Mentasi, R Barovier, et al. (eds.), *Mile anni di Arte del Vetro a Venezia*, Venice, 1982, p. 10.

¹⁷ See Adler, 1907, pp. 16, 18; Jacques de Vitry, pp. 92–93.

¹⁸ This workshop has not yet been published.

¹⁹ This workshop however may date to the period after 1187 when the monastery would no longer have been in Frankish hands.

²⁰ Not published.

²¹ Burchard, p. 28.

²² The number is not clear as the Hebrew letter used to designate it has been alternatively identified as a *dalet* meaning four or a *resh* meaning 200. See Adler, 1907, p. 23.

the gate in the remains of one of the ruined Umayyad palaces uncovered a series of plastered channels and basins, possible remnants of the medieval tanners' yard. Not far from here and from the cattle market was the Street of the Furriers. In thirteenth century Acre there was a street lined with tanners in Montmusard on a property belonging to the bishopric of Hebron north of the Burgus Templi and close to the monastery of St. Catherine.²³ This particular area of the *faubourg* may perhaps still have been a fairly open one even in the second half of the thirteenth century.

C: *Butchers and Fishmongers*

The anonymous text known as *Ernoul* or *La Citez de Jherusalem* locates the butchers in Jerusalem on the left hand side of Temple Street in the eastern part of the city.²⁴ This was conveniently near the cattle market although rather far from the pig market in the Patriarch's quarter which may have had its own slaughterhouse. As noted above, in Acre the butchers were located near the shore in the region in the port on the Street of Butchers.²⁵

It would have been difficult, certainly in the hot climate prevalent in the Near East for most of the year, to transport fresh fish any great distance. If not sold in the immediate vicinity it would most likely have been salted or pickled. As noted, in Jerusalem a fish market was located in the centre of the town at the top of the Street of Herbs.²⁶ Archaeological evidence is lacking but it is quite possible that these were freshwater fish raised in the open pools around the city. In Acre the fish markets were no doubt located along the port front.

D: *Flour Mills and Bakeries*

Bread was a staple in the Frankish diet, and the importance of flour mills and baking ovens is made clear by the many references to them in every type of Frankish settlement. They were one of the basic communal installations in towns, villages, farms, castles and monasteries.

²³ Jacoby, 2005, p. 83. *RHH*, nos. 1207, 1389; Strehlke, nos. 56–7, 104; *Cart. gén. Hosp.*, nos. 3514, 3515.

²⁴ Shirley, p. 16.

²⁵ Above, p. 138.

²⁶ Shirley, pp. 15, 19.

This fact is reflected in their inclusion among the basic requirements listed in the agreements made between the Frankish leaders and the representatives of the Italian maritime cities regarding the quarters the latter established in Crusader ports. Among the feudal institutions introduced to the East was the lord's monopolistic right to construct installations and require his subjects to use them and pay for their use. Mills and bakeries (the *furnum et molendinum* of numerous documents) were included among these.²⁷ Given that such feudal rights were in general strictly adhered to we might expect to find in archaeological evidence only communal mills and baking facilities. Nonetheless, in archaeological finds there is occasional evidence for the use of hand mills. At al-Qubaiba for example seven or eight small basalt millstones from domestic mills are recorded.²⁸ But on the whole there are few finds of hand mills compared to other periods, although this may also reflect a more general change in customs from earlier periods. In neighbouring Egypt it seems that milling at home was unusual and in the cities most people used one of the many communal mills.²⁹ In tenth century Fustat mills were located in marketplaces.³⁰ Probably this was true of twelfth and thirteenth century cities in the Crusader states. It would certainly make sense for grain milling in Jerusalem to be carried out in the area of the grain market which was north of the Tower of David in the open fields. The lepers possessed a mill just outside of David's Gate which was dismantled in 1151 by Queen Melisende because it was blocking the traffic entering the city.³¹ Mills were generally worked by water or by beasts. However wind-mills are also recorded and it may well be that the Franks introduced them to the region. According to Ambroise the Germans were the ones to introduce this technological innovation which had developed in England during the twelfth century.³² The Muslims regarded this machine with astonishment and terror.

Most castles had ovens for supplying the garrison with bread. A large baking oven is located in the vaults on the west side of the inner bailey at Crac des Chevaliers. It was discovered in the clearance work carried out in 1927–28 and was described in some detail by

²⁷ See for example Delaborde, no. 29.

²⁸ Bagatti, 1993, p. 169.

²⁹ Goitein, 1983, p. 142.

³⁰ Ibid., p. 16.

³¹ *RRH*, no. 269.

³² Ambroise, p. 78.

Deschamps.³³ It measures c. 6.5 by 7 m. with internal construction of brick and has two levels: the firing chamber below and the baking level above. Smoke escaped via a chimney that rose and extended through the vault above. Identical ovens have been found at Vadum Jacob and Karak. The need to supply bread for the large number of Franks working on the construction of Vadum Jacob in 1178–79 would explain why this installation was built and already functioning while the castle was still under construction, prior to its destruction in August 1179. As noted above, another baking oven was uncovered in excavations at Arsuf Castle.³⁴ The Church of the Holy Sepulchre possessed bakeries in Jerusalem.³⁵ The Monastery of St. Mary in the Valley of Jehoshaphat was granted a bakery in the north-west quarter known as Juiverie.³⁶ A bakery oven was found in excavations in Jaffa.³⁷ A domed structure uncovered in house 15:23 at Parva Mahumaria was identified by the excavator as a baking oven. As Ellenblum has pointed out its location in the centre of the village, directly opposite the curia where it could easily be observed, is an appropriate one considering the need to impose the *bannum* on the villagers.³⁸ An oven was located in the monastery at Abu Ghosh (Emmaus), and a large bakery occupied the ground floor of the hall-house and one of the adjacent vaults of the farmhouse at Har Hozevim. The ovens at Har Hozevim had arched openings in front and apertures above for the smoke to escape, but there is no evidence for a chimney, and the smoke would thus have filled the ground-floor vault. *Tabuns* were also found in this vault. *Tabuns* were found in Caymont (Yoqneam) in house 4:2 and in two houses built around a shared courtyard in Jaffa. Baking was a profitable business; in 1193 the oven at Margat paid an average annual rent of 150 bezants as did one owned by the Venetians in Acre recorded in 1244, and in Tyre two Venetian-owned ovens paid 55 bezants a year. The highest rate is of one possessed by the Genoese in Acre which in 1249 gave 366 bezants, more than any other of the properties recorded in the list of their possessions at the time.³⁹

³³ P. Deschamps, *Les châteaux des Croisés en Terre Sainte. Le Crac des Chevaliers*, Paris, 1934, pp. 269–74, Fig. 57.

³⁴ See above, p. 124.

³⁵ Bresc-Bautier, no. 68.

³⁶ Delaborde, no. 17; *RRH*, no. 133.

³⁷ Y. Kaplan, "Notes and News: Tel Aviv-Yafo", *IEJ* 16, (1966), p. 282.

³⁸ Ellenblum, 1998, p. 92.

³⁹ See Riley-Smith, 1973, pp. 84–85 and n. 179.

CHAPTER SEVEN

FURNITURE AND HOUSEHOLD INSTALLATIONS

His table dormant in his halle always stood redy covered al the longe day.

Chaucer, Prologue to Canterbury Tales

A purely decorative installation was described by Wilbrand of Oldenburg as embellishing the palace of the Ibelins in Beirut:

In the interior of the palace, in the middle there is a pool constructed of marble composed of various pieces in various colours. . . . They represent a variety of innumerable flowers. When the onlooker tries to discern them, they dissolve and convey an illusion. In the middle there is a dragon, who seems to inhale the animals depicted. He ascends from a crystal clear fountain that splashes water so abundantly that it rises into the air which streams in through a beautifully ordered window and in time of heat makes the air humid and cool. The water that overflows on each side of the pool drains through small openings and brings, through its quiet whisper, repose to the lords who sit around.¹

If this is a reliable description it certainly would not be what one would find in most houses, even of the wealthy. Although there may have been items of luxury, furnishings and installations would have been primarily utilitarian.

A: Household Furniture

In the medieval West furniture was often limited to trestle tables, perhaps a single *table dormant*, a few chairs and benches, chests and bedsteads. This dearth of movable furnishings appears to have prevailed in the East as well. From the *Geniza* documents it is apparent that chairs and tables had become unfashionable in Egypt in the Middle Ages and people preferred as little heavy furniture as possible.² In the Byzantine towns and villages also, tables and chairs were uncommon items in

¹ Wilbrand of Oldenburg, p. 167, trans. from Prawer, 1972, p. 452.

² This was true of the *Geniza* community and probably represents most housing at the time. See Goitein, 1983, p. 108.

most houses;³ and from their scarcity in the written sources and, less surprisingly in archaeological evidence, we can understand that the same was true of houses in the Frankish East. Although tables and benches are recorded among the possessions of the Italian communes in Acre, these objects were used to display goods for sale and were not items of household use.⁴ The only archaeological evidence for such items in domestic use comes from three sites: a Military Order castle, a monastic house and a farmhouse. Tables in the refectory of the monastery of St Euthymios, east of Jerusalem, were made from large blocks of stone laid laterally on elongated stone-built bases adjacent to stone-built benches along the walls.⁵ Tables in the Hospitaller refectory of Bethgibelin Castle were, as noted above, formed from *spolia* marble columns that had been cut in half lengthways with the curved side down and the flat side uppermost, supported on stones. These were placed in parallel rows across the room (Figure 39).⁶ A table formed of a monolithic slab of limestone was found during the excavation of the farmhouse at Har Hozevim (Figure 46).⁷ It was located in the main vault near the bakery installation and may well have been used to prepare the dough.

What do we know of beds? The bed as an item of furniture is well documented in the West appearing in numerous illustrations in manuscripts and referred to in lists of furnishings and wills. In the East, however, the situation was considerably different. In Egypt wooden bedsteads that were used in earlier periods are still mentioned *Geniza* documents of the tenth and eleventh centuries; but they seem to have gone out of fashion by the twelfth century, by which time there are references only to bedding (pillows, mattresses, pads to be laid over the mattresses and various types of bed linen and covers).⁸ In

³ See N. Oikonomides, "The Contents of the Byzantine House", *DOP* 44 (1990), p. 212.

⁴ There are references in this period to tables in churches, notably the table of the Last Supper which was shown to pilgrims in the Cenacle on Mount Zion and the table where the gifts of the Magi were placed which was shown to those who visited the Church of the Nativity; but clearly these were not used for domestic purposes and it is more than likely that mentions of them may refer to tables shown on fresco or mosaic wall decorations rather than to the actual objects themselves.

⁵ Meimaris, 1989, Figs. 83, 84.

⁶ See Kloner, 2000, p. 35.

⁷ May, 2000, p. 42 (erroneously referred to here as a bench).

⁸ Goitein, 1983, pp. 107–17.



Figure 46. Monolithic stone table at Har Hozevim (courtesy of Natasha May, IAA).

Byzantine houses too the bed seems to be, if not unknown, a rarity.⁹ In the Crusader states no identifiable archaeological evidence exists for bedsteads or bedding and even in the written sources the evidence is limited. The occasional mention of beds is entirely uninformative regarding their appearance. Bedsteads are referred to as among the items abandoned by the Franks when they left Jerusalem following the Ayyubid siege in 1187.¹⁰ During the Templars' trial, Bertrand Guasc recalls the presence of a bed in the sacristy of the Templar Sea Castle at Sidon but says nothing more about it. Usāmah ibn Munquid's reference to a bed in a Frankish house is amusing as a tale but of little use.¹¹ Nor are bedsteads mentioned in the Rules of the Military

⁹ See Oikonomides, 1990, p. 209.

¹⁰ Lyons and Jackson, 1997, p. 275.

¹¹ Usāmah tells of a Frank in Nablus who, on coming home found a man in bed with his wife: *He asked him, "What could have made thee enter my wife's room?" The man replied, "I was tired so I went in to rest." "But how," asked he, "didn't thou get into my bed?" The other replied, "I found a bed that was spread, so I slept in it." "But," he said, "my wife was sleeping together with thee!" The other replied, "Well, the bed is hers. How could I therefore have prevented her from using her own bed?"* Usāmah Ibn

Orders except in the Jerusalem Hospital.¹² The Templar Rule, which is fairly detailed with regard to bed linen, records only that each brother would have a straw mattress, a bolster and a blanket (a linen blanket with a soft pile) with no mention of a bedstead.¹³ Each brother should "...receive for his bed three pieces of bed linen: a bag in which to put straw, a sheet and a light blanket.¹⁴ Also he should have a rug (white, black or striped) to cover his bed and a bag for his nightshirt."¹⁵ The Teutonic Rule (no. 11) also recorded that a brother's personal possessions would include a sleeping bag, a rug, a sheet, a coverlet of linen or buckram and a pillow but said nothing about a bedstead. However there were bedsteads in monastic dormitories. It is recorded that while in Jaffa in 1252–53 King Louis IX founded a Franciscan house and, among other items, provided it with beds.¹⁶ Beds can be seen in illustrated manuscripts painted in the scriptorium of Acre in the thirteenth century.¹⁷ These appear to be covered with mattresses and have sheets, pillows and blankets but it is not at all certain that these illustrations represent the local situation, rather than the furnishings that the artists may have known before coming to the Latin East. However, in spite of the lack of evidence, we can assume that bedsteads would have been basic objects of furniture in many Frankish houses, at the very least in the houses of royalty, the nobility and the wealthy bourgeoisie.

B: *Heating Installations: Fireplaces, Chimneys and Chimney Pieces*

Winter conditions in the Latin East made it no less necessary to heat domestic apartments than in the more temperate climates of the West.

Munqidh, p. 65. This is informative regarding how Muslims perceived or ridiculed Frankish character, but it throws little light on the appearance of the bed.

¹² The Hospitaller Rule (Statute 3 of the Statutes of Fr. Roger des Moulins) states that beds for the sick should be as long and as broad as is most convenient for comfort and refers to bed linen including sheets and a coverlet (*covertour*).

¹³ Upton-Ward, nos. 21, 382.

¹⁴ The "bag in which to put straw" is clearly the mattress and straw mattresses are also referred to specifically. Ibid., nos. 21, 293, 382.

¹⁵ Ibid., no. 139.

¹⁶ Pringle, 1993, p. 271.

¹⁷ See Buchthal, 1957 (illustrations from the *Histoire Universelle*, Plates 92–95, which show some rather elaborate turned-wood bedsteads); and J., Folda, *Crusader Manuscript Illumination at Saint-Jean d'Acre, 1275–1291*, Cambridge, N.J., 1976 (Paris Bibl. Nat., MS nouv. Fr. 1404, *Bible*; MS. Fr. 20125, *Histoire Universelle*; Brussels, Bibl. Roy., MS. 9492–3, *History of Outremer*), Plates 46, 49, 50, 58, 64, 116, 162, 231, 240.

In addition, the extreme summer conditions required sufficient ventilation. The Frankish builders had to contend with these issues as well as find suitable means for lighting apartments that were often quite dark, even in the daylight hours, because of the massive stone construction.

With the exception of the Crusader period, fireplaces and chimneys were almost unknown in Near Eastern domestic buildings until comparatively recent times. In simple houses, heating and ventilating arrangements could be quite primitive, as can be seen from the following description of a nineteenth century village house in Yabrud north of Ramallah:

One of the houses which we entered was so full of smoke that we had to make a hasty retreat, only to find that the others seemed even worse. A smouldering fire of thorns burnt slowly against the walls, and as there was neither window nor chimney, the smoke had to make its way out as best it could, by the door which stood open, though it was too chilly to make so much ventilation agreeable.¹⁸

However, archaeological evidence from recent years has shown that for heating domestic buildings and castles in the Latin East the Franks made use of well-designed constructed fireplaces with wall chimneys. This fact is remarkable not only because such technology was previously unknown in the Near East, but also for its early use by a displaced European population coming from regions where it would still be a few centuries before fireplaces and chimneys were in general use. Throughout most of Europe the method of heating domestic apartments remained the use of movable braziers or central floor-hearths and roof openings. Wall chimneys and fireplaces were found in the West even before the establishment of the Crusader states, but they do not appear to have been present in rural dwellings and until the fourteenth century are only occasionally recorded in the houses of royalty, nobles, and wealthy burgesses and in abbeys. The chimney was originally intended only to remove smoke. It was eventually modified in order to draw the smoke up the flue while leaving the heat behind to be radiated into the living area. With innovations a fireplace could be built on every floor in a multi-storey building.¹⁹ In Brittany, Frisia and

¹⁸ C. Geikie, *The Holy Land and the Bible*, London, 1891, p. 686.

¹⁹ Clermont-Ganneau, 1899, p. 16; See for example the hearths on three storeys in the donjon at Loches (Indre-et-Loire), Duby 1988, p. 419 (plate).

the Vendee the construction of hearths in the living area dates to the mid-twelfth century and in central and southern Europe it was introduced in the twelfth century into castles and manor houses and into town houses of the wealthier merchant class.²⁰ Prior to this, hearths were usually set in the centre of the principal room of the house or in the kitchen.²¹ In England wall fireplaces are found from the time of the Norman invasion, but all are in stone manor houses, abbeys and castles.²² In France they are found in better examples of urban housing such as the stone houses of merchants in Cluny.²³ A late thirteenth century house in Villy-le-Moutier in Burgundy had a chimney for a fireplace.²⁴ In Venice fireplaces appear in the thirteenth century, in Florence from about 1300, in rural Italy considerably later.²⁵ Heating in single-storey rural houses at this time was in many places achieved by having livestock within the house. The introduction of the fireplace into the house is a seminal event in the history of domestic architecture in Europe. According to Stenton the appearance of the chimney was the most striking development in house construction to take place in that period.²⁶ It coincided with the decrease in the size of the house as it evolved from a communal dwelling of pre-tenth century

²⁰ Dating of the introduction of wall chimneys in the West varies among scholars. Fossier (1988, p. 69) states that there is no evidence for it occurring in Italy, England or Thuringia before 1340. Stenton (1983, p. 250) writes that in England the chimney became common in ordinary houses only late in the thirteenth century. As noted, at Cluny they have been dated to the twelfth century.

²¹ In some parts of Europe the old methods of heating were retained. In northern and eastern Europe and in the mountainous regions of central Europe the stove was more common. See Rosener, 1992, p. 81.

²² Wood cites examples at Colchester (c. 1090), Rochester (1126–39), Castle Hedingham (c. 1130); Hemingford Grey (c. 1150); King John's House, Southampton (c. 1150); Conisborough Castle, York (c. 1185–90); Rievaulx Abbey (late twelfth century); Boothby Pagnel Manor House, Lincolnshire (c. 1200); Lodsworth Manor Farm, Sussex (early thirteenth century); Salt Tower (Tower of London) (1230–40); Lud-desdown Court, Kent; St. Briavels Castle, Gloucestershire (1240+); Clifford's Tower, York (1245–62+); Bennett's Hall, Shrewsbury (c. 1250–60); Abbingdon Abbey, Berkshire (c. 1260); Netley Abbey, Hants. (c. 1260); West Dean Rectory, Sussex (c. 1270–80); Byward Tower (Tower of London) (c. 1279); Charney Bassett Manor House, Berks. (c. 1280); Aydon Castle (c. 1280); Conway Castle, Cear. (c. 1283–7); Stokesay Castle (c. 1285+); Moot Hall, Dewsbury, Yorks. (c. 1290); and House at Woodstock, Oxen (1290). See Wood, 1965, pp. 273–74.

²³ Grandchamp et al., 1997. Examples are to be seen in twelfth century houses at 6 Rue d'Avril and 7 Petite-rue Lamartine, which have large hooded fireplaces, and 29–31 rue Mercière, which has a fireplace with a conical chimney.

²⁴ Duby, 1988, p. 60.

²⁵ Ibid., p. 192.

²⁶ Stenton, 1983, p. 251.

Europe to a house for an individual family. The word “hearth” thus came to represent the family unit. The innovation of the fireplace and wall chimney in rural houses was also of great importance as it ended the necessity of sharing space with livestock for heating purposes and thereby brought about a major change in the layout of the domestic space, with animals segregated into special areas separate from or outside the area of human habitation.²⁷ As to the social changes it created Fossier writes:

The presence of the hearth within the house created an entirely new situation as far as peasant attitudes were towards the family structure and social arrangements. The women who tended the fire drew from it their power and influence; it gave the old men who warmed themselves there the opportunity to relate the history of their family and of the village and it offered greater chance of survival to the little babies placed near it for warmth.²⁸

The use of chimneys in the Latin East was therefore a remarkable innovation, at the very least for their appearance in rural houses at such an early date. Most examples found in the Latin East are in simple twelfth century village houses. Wall fireplaces and chimneys have been found in four, possibly five excavated houses in the Frankish village of al-Kurum, in the modern Jerusalem suburb of Ramot Allon (Ramot 06) (Figure 47).²⁹

The chimneys at al-Kurum were constructed of dressed stones and built into the northern walls of the houses. At the base was usually a low semi-circular hearth from which a rectangular chimney shaft rose within the wall. In one house (12:18) the fireplace has survived more or less intact. It has an arched opening supported on curved brackets. Stones forming the border of the hearth are raised to close in the fire area. We can assume that these chimneys were intended solely or at least primarily for heating rather than for cooking or some other type of household industry. Houses with these chimneys have separate cooking areas; no archaeological evidence such as metal slag was recovered in or around them to suggest a possible industrial function.

Similar chimneys have been recorded in other villages. Conder and Kitchen of the British Survey of Western Palestine noted that there

²⁷ Fossier, 1988, p. 69.

²⁸ *Ibid.*

²⁹ Boas, 1996, pp. 585–86, Fig. 7.



Figure 47. Chimney piece in house at al-Kurum (photograph by author).

was “a Crusading chimney” at Nebi Samwil,³⁰ and Clermont-Ganneau wrote, “I observed many chimneys cut in the rock; courses of ashlar imitated in the rock, chimneys built of hewn stone.”³¹ Clermont Ganneau also described what he identified as a “Frankish” chimney in the heart of the village of Sha’afat (Figure 48):

I went with M. Lecomte to make a fresh examination of the ruins that the fellas call El Kenisah and which are embedded in one of the houses in the village. Through the suffocating smoke which half blinded us we were able to make out a piece of wall with two pointed windows, well enough built looking east.... Above on a flat roof under a vault we noticed a curious stone chimney piece, very like those to which I once drew attention at Nebi Samwil.³²

Some chimney chutes can be seen in urban houses. In Acre these are usually of chimneys in fragmentary condition. Not every such chute necessarily served as the chimney of a fireplace although occasionally soot on the interior aids in identifying its function. In house 1:8 the remains of a chimney built of brick-size stones and with remains of ash on its inner face was built on a wall of what had been the courtyard until the house expanded internally, extending over the courtyard (Figure 49). It is probable that this chimney post-dates the expansion of this house. In a house in Famagusta, north-west of the palace, there is a chimney stack with a projecting fireback supported on an arch springing from two thirteenth century capitals; the fireback tapers above into the flue. Enlart notes that it is remarkably similar to chimneys at Figeac in France.³³ There are a number of large decorated fireplaces and wall chimneys in the Hospitaller commandery at Kolossi.³⁴

³⁰ Conder and Kitchener, vol. 3, 1883, p. 151. My own observance of remains of a chimney exposed in this area during the excavations (1992–2003) led me to conclude it was probably of quite recent date.

³¹ Clermont-Ganneau, vol. 1, 1899, p. 474.

³² Ibid., pp. 471–72. I visited this village in December 1994 and found no trace of this chimney; others that I noticed in adjacent buildings were all clearly of post-Frankish date, a particularly fine one in a traditional Palestinian house and two in the *diwan* of the house of a village elder named Abu Khde’ar.

³³ Enlart, 1987, p. 458, Fig. 385.

³⁴ E. Aristidou, *Kolossi Castle through the Centuries*, Nicosia, 1983, pp. 20, 24, Plate 5, 9; Enlart, 1987, pp. 498–500, Figs. 413–18.

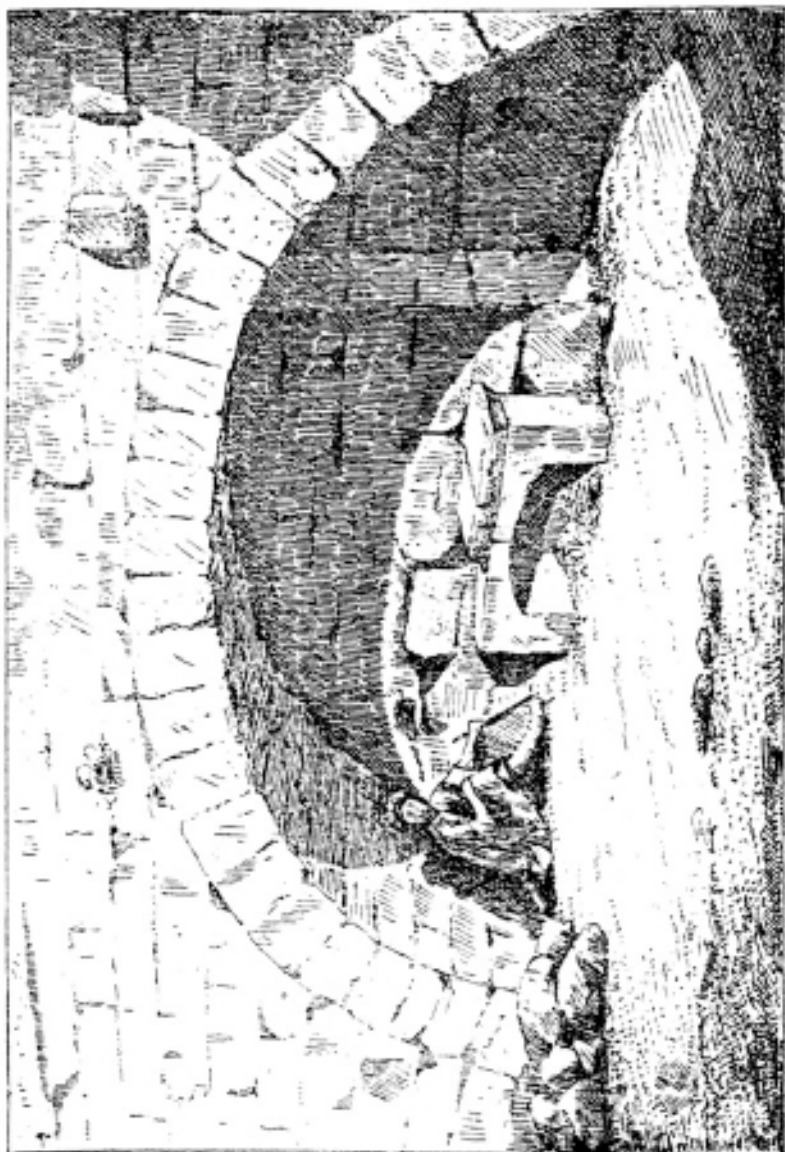


Figure 48. Drawing of 'Crusading' chimney at Sha'fat.



Figure 49. Remains of chimney in house in Acre (photograph by author).

C: *Artificial Illumination*

Prior to the introduction of lighting by gas and electricity in the nineteenth century, candles and oil lamps were the principal means of artificial illumination. However, wax candles were probably rather expensive for household use in the Middle Ages and were principally used in churches. According to the *Geniza*, beeswax candles were an expensive commodity costing as much as three times the price of olive oil (and for oil lamps most people probably used cheaper substances such as linseed oil).³⁵ The Hospitaller Rule contains a statute from the

³⁵ Goitein, 1983, p. 133. However, the tax levied in the kingdom on wax was comparatively low—2 bezants and 5 karoubles on 100 bezants worth, whereas for sesame oil the duty was 11 bezants and for other oil 8 bezants and 4 karoubles! See S.J. Alled and E. Amt (eds.) *The Crusades: A Reader*, Toronto, 2003, pp. 96, 98–99. Bronze pricket candlesticks and large iron candelabra have been found in excavations, but these were probably used for liturgical purposes rather than illumination. See Boas, 1999, pp. 157–58, Plates 6.6, 6.7. For a contemporary (thirteenth century) illustration from the Acre scriptorium of wax candles see J. Folda, *Crusader Manuscript Illumination at St Jean d'Acre, 1275–1291*, Princeton, 1976, Plate 212.

Chapter-General of 1288 which refers to an iron lantern.³⁶ Ceramic oil lamps were possibly placed on tables and benches and in many cases were placed in small niches in walls. In house 3:2 at Caesarea small lamp niches are located high in the walls. In the twelfth and thirteenth centuries various types of oil lamps were in use. Mould-made lamps, sometimes referred to as “slipper” lamps, are frequently found. Equally common are various types of wheel-made lamps, among them the newly rediscovered “saucer” lamps. These were a reintroduction of the traditional saucer with a pinched nozzle—a type of oil lamp predominant in the region until the Hellenistic Period. In the Middle Ages these reappeared and then underwent a series of developments; they were often given a dome-shaped covering with a filling hole at the top and a wick hole at the front facing the nozzle. A handle stretched from the back of the reservoir cover, reaching the rim at the back of the saucer. Generally made of reddish-brown clay, these are sometimes referred to as “beehive” lamps. Slipper lamps had moulded decoration—usually a simple geometric design—and the saucer lamps were often decorated with lead glaze, occasionally with a slip-painted design.³⁷ Also in use at this time were bottle-shaped lamps (Figure 50).³⁸

Glass oil lamps, first introduced in the Late Roman period, were also in use in the Crusader period. In the Byzantine period they took on the open form that was still in use in the Middle Ages—that is, a deep bowl or low beaker with three attached handles for hanging, often with a central tube for the wick. Contemporary illustrations from a Crusader manuscript illuminated in Acre in the thirteenth century show hanging oil lamps, possibly representing glass lamps. These are scenes of the death of Isaac (Fol. 55r) and the death of Jacob (Fol. 81r) in the *Histoire Universelle*.³⁹ In the latter and in a scene of the prayer of Anna (Fol. 94v) in a Bible from the same scriptorium we can discern a mechanism for lowering the lamp from the ceiling in order to refill it by means of a cord or chain.⁴⁰ In public buildings and perhaps also in large private apartments several such lamps might be hung together

³⁶ King, 1981, no. 10, p. 90.

³⁷ For examples from Frankish contexts see Ben-Tor et al., 1996, pp. 196–97, no. 8; Avissar, 2005, p. 80, Fig. 3.1.9; Avissar and Stern, 2005, pp. 124–25, Plate 34.2, Fig. 52.3–4; Tushingham, 1985, Figs. 34.40, 35.42.

³⁸ Avissar and Stern, 2005, pp. 124–26, Fig. 52.5–6.

³⁹ Folda, 1976, Plates 57, 64.

⁴⁰ Ibid., Plate 43. The flat-based, closed vessel form of the latter lamp, like those in scenes of the Holy Sepulchre (Plate 148) and on the seal of the Hospitallars (See



Figure 50. Medieval bottle lamp from Acre (photograph by Clara Amit, courtesy of Edna Stern, IAA).

to provide more illumination.⁴¹ Iron rings frequently found in excavations set in the keystones of vaults may have served for hanging these lamps.⁴²

In the twelfth and thirteenth centuries there may have been ceramic candle stands almost identical in form to the saucer-type oil lamps. Occasionally “beehive”-type oil lamps found in excavations have a reservoir too small to have been efficient as an oil container; indeed, in some cases such a lamp is open at the base and could not have functioned as an oil container at all, and in these cases there was often no

G. Schlumberger, *Sigillographie de l'Orient Latin*, Paris, 1943, Plate 12) suggests that these latter may represent metal rather than a glass lamps.

⁴¹ Ibid, Plates 140 (Fol. 10r), 148 (Fol. 89v) (pilgrims at the Holy Sepulchre).

⁴² Such rings have been found at *Chateau Pelerin* and *Vadum Jacob*.

wick hole. Possibly the reservoir and wick hole had become redundant and the shallow round hollow at the base of the saucer was intended to support for a wax candle. This would have been a comparatively cheap substitute for metal candelabra such as were used in churches.

D: *Private Water Supply*

Prior to the advent of piped water to supply domestic needs, an installation for water storage was always a basic component of domestic buildings. Virtually every house in towns and villages had its own water supply, generally in the form of a subterranean cistern. The most common and reliable source of drinking water was from cisterns; consequently most buildings in towns and villages had cisterns. These were constructed either in the form of barrel vaults with adjacent settling tanks or sump shaft, or as bell-shaped rock-cut cisterns. Numerous constructed cisterns have been recorded in domestic structures in Jerusalem. Benjamin of Tudela wrote that “the people of Jerusalem for the most part drink the rainwater, which they collect in cisterns in their houses.”⁴³ In Tyre, according to Ibn Jubayr, there was no house without a well or cistern.⁴⁴ There were large cisterns in many of the shops along David Street, possibly for the use of both the shop/workshop on the ground floor and the domestic apartments above. In Caesarea the Franks made use of existing cisterns in the Fatimid houses they adopted or reconstructed. In a house near the eastern city gate a plastered reservoir (c. 1.2 by 4.7 m.) was located above ground level within a thick wall.⁴⁵ In the north of the city a large merchant house had a cistern below its south wall.⁴⁶ In Acre well-constructed cisterns were found in some of the houses excavated in the north-west quarter in 1994–95 and more recently in 2007 (Figure 51). The water was collected from the roof via ceramic pipes, and from the courtyard itself if it was paved, and was carried to the sump-shaft and from there to the cistern. In rural houses this supply was sometimes supplemented with water carried from several house roofs and

⁴³ Adler, 1907, p. 23.

⁴⁴ Ibn Jubayr, p. 325.

⁴⁵ See Boas, 1998, p. 78.

⁴⁶ Pringle, 1993, p. 183.

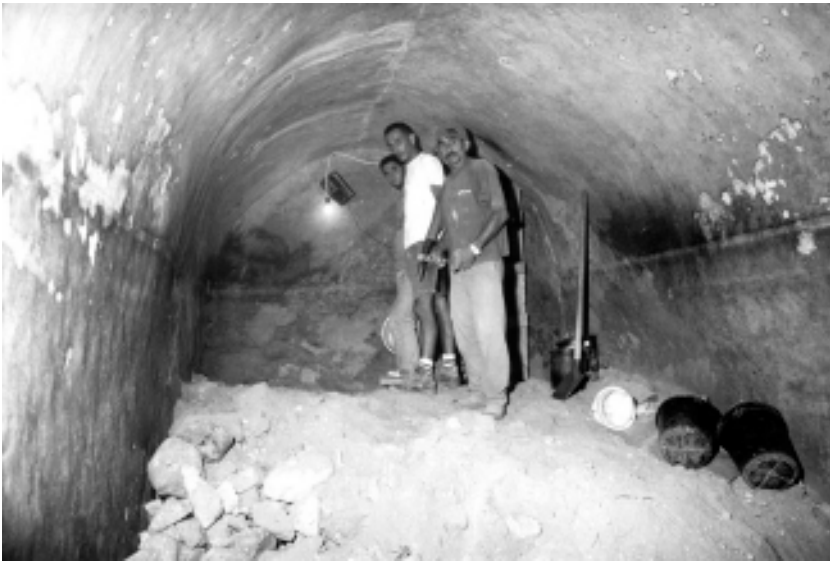


Figure 51. Cistern in house in north-east Acre (photograph by Howard Smithline, courtesy of Danny Syon, IAA).

courtyards via storm-water channels. In the village of al-Kurum rain-collecting pits were dug against the walls of some houses where rain water was collected, apparently from pipes that have not survived, and was carried from these pits into channels cut in the bedrock that ran along the edge of the street outside the houses and flowed into cisterns in the floors of some of the houses or in the croft beyond. A typical cistern in this village was located in a back room apparently used as a kitchen. It had an opening one metre in diameter and widened out into a bell shape (Figure 52). Water entered the cistern not directly from the pipes and channels but via a small, shallow settling basin cut in the rock; it had a connecting pipe to the cistern higher than its base so that any dirt in the water would settle down to the floor of the basin and only clean water would pass through the pipe into the cistern. This basin could be easily cleaned when necessary. A considerably larger well-constructed cistern was built in the farm/manor house complex at Qalonie (Motza). This was a barrel-vaulted installation of two parallel vaults that could contain c. 1,700 cubic m. of water. The structure which was fed by a stone channel possible originating in springs to the west is divided within by an internal arched support of three



Figure 52. Cistern and sump in kitchen of house in al-Kurum (photograph by author).

round arches on two freestanding piers. Construction of the latter is of Frankish diagonally-tooled ashlars, some displaying masons' marks.⁴⁷

E: *Laundering and Latrines*

We are well acquainted with the laundresses of the Third Crusade the "*virtuous elderly women pilgrims*" who, according to Ambroise, washed the clothes and heads of the soldiers and were "as good as monkeys at getting rid of fleas".⁴⁸ Unfortunately, although perhaps not surprisingly, this is about all we hear in the sources about laundering, and there is no archaeological evidence for this activity. In the excavations of Belvoir Castle, an area in the north-west corner of the inner bailey was identified as a washing area and laundry, but the evidence for this is rather uncertain, consisting of nothing more than a cistern, troughs and channels.⁴⁹

Latrines have been identified in only a handful of Frankish houses. This is certainly due mainly to the paucity of archaeological studies of Frankish domestic architecture. However it is likely that, as in many settlements in the West, private houses had no latrines at all. In villages this would not have been such a great inconvenience as the surrounding fields would have been available but in densely populated towns such as Jerusalem or Acre the lack of latrines would have posed a problem, in particular to those distant from gates or from the open fields adjacent to the walls. The general lack of hygiene in Acre, as recorded in many contemporary sources, suggests that many houses lacked sanitation facilities.⁵⁰ As Acre had no sea wall it is possible that some residents in areas adjacent to the shore relieved themselves

⁴⁷ Greenhut 2008, pp. 73–75.

⁴⁸ Ambroise, p. 110.

⁴⁹ M. Ben-Dov, "Belvoir (Kokhav Ha-Yarden), *NEAEHL*, vol 1, 1993, p. 184.

⁵⁰ It may well be that Acre was like parts of medieval London where due to a lack of privies local tenants: "...threw their ordure and other horrible liquids before their doors, to the great nuisance of holy church and passers-by". See *Plea and Memoranda Rolls*, preserved in the archives of the Guildhall Rec. Off. London, A 50, m 4^v. On the unsanitary conditions in Acre see D. Jacoby, "Three Notes on Crusader Acre", *ZDPV* 109 (1993), pp. 88–91 and John of Joinville's reference to the "filthy sea of Acre" (1963, p. 278). If water from the Belus River was diverted into the moat at the south-east of the city it could have been used for washing away sewage from public latrines located in the walls. Such arrangements are known in some Western cities and fortresses. See for example E.L. Sabine, "Latrines and Cesspools of Mediaeval London", *Speculum* 9 (1934), p. 308.

there.⁵¹ We can assume however that there would have been, as there were in European cities, public privies. For example, thirteenth century London had public latrines for the use of local householders as well as visiting merchants. In such towns as Acre and Tyre with their large merchant population between the autumn and spring *passagia*, and in Jerusalem which had a large seasonal influx of pilgrims, public latrines would have been obligatory. At present communal latrines are known about only in compounds of the Hospitaller Order in Acre and Jerusalem and in some monastic complexes. These would have been intended solely for the use of members of the order or in some cases for resident pilgrims and patients in the hospitals and infirmaries. Such a communal latrine was uncovered in the north-west corner tower of the Hospitaller compound at Acre.⁵² It consisted of a rectangular room (5 by 10 metres) that contained rows of stone seats lining the walls beneath which were chutes carrying the waste down to a lower room with a sloping floor into a well-constructed system of vaulted subterranean passages that apparently carried it into the harbour. A similar installation once existed in the large building on the eastern side of the Hospitaller compound in Jerusalem. It was destroyed either in 1902 when the eastern side of the Muristan was under reconstruction as the Lutheran compound of the Church of the Redeemer or perhaps some time later when a school was constructed on the site. However its basic layout is recorded in plans drawn up by Charles Warren in 1867–70.⁵³ Here, above a large barrel-vaulted latrine pit was a room with eight square shafts along the northern and southern walls which would have been under the latrine seats. At the Hospitaller complex at Abu Ghosh (Emmaus) latrines were built on two levels over a latrine pit located in the south-east corner room of the cloister adjacent to a vaulted room containing an oven to its east.⁵⁴ In cloistral monastic buildings the latrine was usually located adjacent to the dormitory,

⁵¹ One latrine in Acre, perhaps in a prison near the walls, is recorded when one of Saladin's emirs escaped from it via a window after the city had returned to Frankish hands in 1191. See Lyons and Jackson, 1997, p. 342.

⁵² See E. Stern, "The Center of the Order of the Hospitallers in Acre" *Qadmoniot* 33, 119 (2000) (Hebrew), pp. 9–10.

⁵³ The plan of one of the large structures in the Muristan Warren illustrated a cess-pool (38) with eight shafts, probably from the latrine seats above them. See plan in C. Warren *Jerusalem Excavations by Capt. C. Warren, 1867–70 (Atlas of Plans)*, London, 1870; Pringle 2007, Fig. 44.

⁵⁴ De Vaux and Steve, 1950, pp. 100–101.

and the location of either of these elements can point to the location of the other if it is missing. In the Carmelite monastery in Wadi Siyah, Mount Carmel, is a tower that Pringle has suggested may have been a reredorter (latrine tower) serving the monks' dormitory and constructed over a water channel so that water would carry off the waste. There is no archaeological evidence for it having served this function other than the location of the room on one side of the cloister and the fact that a water channel runs beneath it, although such an arrangement is common enough in European monastic complexes one wonders whether it would have been functional here where the water supply flowing in the channel beneath the latrines would have been erratic at best and probably completely dry for most of the year.

Occasionally there is archaeological evidence for latrines where the latrines themselves have not survived. In a merchant's house in the north of the town of Caesarea, pipes from the upper floor where the domestic quarters were apparently located led to a subterranean sewage tank. In the rural estate centre at Burj Bardawil, 24 km north of Jerusalem, a latrine chute in the eastern corner turret of the early twelfth century *quadriburgium* carried sewage down to a subterranean cess-pit.⁵⁵ In Hospitaller Aqua Bella on the Jaffa-Jerusalem road, a pipe in the floor of the turret in the south wing and a rock-cut void below the turret, which Enlart suggested may have been a latrine pit, raises the possibility that this was a latrine tower.⁵⁶ A ceramic pipe in a chamber at the southern end of the east wing of the nuns' cloisters at Bethany may indicate that a latrine was located here. Latrines are found in some of the Frankish castles—for example, Crac des Chevaliers, in the north-west vaults in a series of arched alcoves on the outer wall of the vaulted-halls around the inner ward.⁵⁷ At the Teutonic castle of Montfort two latrine chutes extend down from the southern side of the Great Hall and the domestic wing. At nearby Iudin, closet latrines were located in the two towers, and at Saranda Kolones in western Cyprus there were latrines on two levels of the castle, one above the

⁵⁵ Pringle, 1994, p. 38 and Plate 8.

⁵⁶ Enlart, 1925, vol. 2, p. 106. Pringle considers it more likely to be a cistern. See Pringle, 1993, p. 246.

⁵⁷ Similar latrine recesses to those found in Crac des Chevaliers, albeit of the late fourteenth century, can be seen in a garderobe tower at Langley Castle. Wood 1965, Fig. 115, p. 382.

other, in the piers supporting the groin-vaulted rooms that surround the courtyard.

The best preserved example of a latrine found in a private house is in house 4:2 at Caymont (Figure 53). It consists of a stone seat over a cesspit located within a low arched vault and was constructed in the courtyard of the house as far as possible from the entrance to the domestic quarters.⁵⁸ An installation that has been tentatively identified by excavators as a latrine was found in the kitchen of a house in the Frankish rural settlement of al-Kurum in the modern Jerusalem suburb of Ramot Allon. Here a slab of stone was placed over a pit dug in the bedrock and against the back wall of the house, in a room that clearly served as the cooking area, and a channel from the pit led out under the house wall into the field behind it. The presence of the latrine in a kitchen, if it was indeed a latrine, may seem inappropriate, but as these houses were quite small there were not all that many options (at least on the ground floor level). Probably in most of these village houses there were no latrines at all.

F: *Drainage*

In the West projecting water spouts used in private and public buildings to drain water from gabled roofs into the streets. In the Latin East where the collection of water for drinking purposes was much more necessary this wasteful method of disposing of rainwater was probably exceptional. Of the few examples one fine carved gargoyle with two animal heads, possibly horses, can be seen in secondary use in Jerusalem's *Via Dolorosa* (Figure 54). Another example was found at Ascalon in the form of a lion's head and recent excavations have exposed a house in Caesarea with gargoyles.⁵⁹

⁵⁸ Old French documents refer to the latrine as the *longaigne* ('far-off place'). See M. Wood, 1968, p. 378. This sentiment is recalled in a somewhat later reference to the desired location of the latrine - "A wyse buylder wyll set a sege house out of the wey from syght and smellynge." See C.E. Moreton, "A Break-in at Norwich, 1549", *EHR*, 108 (1993), p. 393.

⁵⁹ It is not yet clear if these are *in situ* or are in secondary use. Y. Porat, personal communication.



Figure 53. Latrine in house at Caymont (photograph by Sandu Manda, courtesy of Miriam Avissar, IAA).



Figure 54. Water spout reused in Church of Flagellation, Jerusalem (photograph by author).

CHAPTER EIGHT

COMMUNAL INSTITUTIONS OF DOMESTIC LIFE

Urban and to a lesser extent rural administrators endeavoured to supply certain basic requirements for the public including, most prominently, a supply of water, which was a basic necessity, as well as certain less-essential but desired amenities.

A: Public Water Supply

In cities, some water for private use was supplied from springs within or just outside the city or was carried from more distant springs via aqueducts. Such water was more likely to have been intended for communal than private use, for example, to supply communal bathhouses or for industrial use. In Jerusalem, the Gihon spring supplied a varying quantity of water to the Siloam pool—the quality of which was probably not very high, especially in the summer—and this would explain its use primarily for the tanning industry which was located around nearby Tanners' Gate. The aqueduct that carried water from the reservoirs at Artas south of Bethlehem was still in working order in the Middle Ages and continued to supply water which was directed to the Temple Mount and probably used in the bathhouses located there.¹ Another aqueduct carried water from the Patriarch's Pool west of the city to a cistern under the northwest tower of the citadel and to the inner Patriarch's Pool (Hezkiah's Pool) in the Patriarch's quarter. This latter pool supplied the Patriarch's bathhouse (located south of the hospital). The open pools in and around Jerusalem would probably have supplied water for livestock and other purposes rather than for drinking water.

¹ Even long after the Crusader period this aqueduct was still in working condition, Ludolf of Suchem writing in the first half of the fourteenth century notes that Jerusalem's cisterns "are filled by water which is brought from Hebron by underground aqueducts and channels, which may be seen by the side of the road as one journeys along it". See Ludolf, p. 97.

A spring referred to by Ibn Jubayr, the Ox Spring (Ain al-Bakr), was located near the eastern wall of the town of Acre. Is it possible that in the Crusader period water was also supplied to Acre from springs to the north of the city? Although there is, as yet, no clear archaeological evidence, this would seem a not entirely unreasonable suggestion considering the use in the Hellenistic period of an aqueduct to carry water from springs in the region of Kabri to the north-east as well as the aqueduct that was constructed in the period of Turkish rule.² Both Frankish Tyre and Sidon had aqueducts. In Tyre an aqueduct carried water from Ras al-Ain to the south.³ According to Ibn Jubayr, there was a spring at the Land Gate and the city had numerous wells.⁴ As for Sidon, al-Idrissi wrote that water was brought down from the mountains by an aqueduct.⁵ One of the aqueducts in Caesarea, the high-level aqueduct, may still have been in use in the twelfth century, although the adjacent low-level aqueduct and the old channel in the high-level aqueduct had fallen into disrepair due to the continuing deterioration and erosion of the coastline north of the city.⁶

B: Bathhouse and Bathing in Frankish Society

In European monastic houses bathing was generally discouraged and monks were limited to bathing three times a year. Only the sick were permitted more frequent use of the baths.⁷ The conventual bias against bathing was a fear of infringements to morality as much as anything else; but members of the lay community were also infrequent bathers, and here it may come down simply to the difficulty and expense involved in regular bathing. The thirteenth century Muslim geographer al-Qazwini (d. 1283) gave the Muslim view of western Frankish

² See R. Frankel, "The Hellenistic Aqueduct of Akko-Ptolemais" in D. Amit et al., eds., *The Aqueducts of Israel*, JRA 46 (2002), pp. 82–87.

³ For an eighteenth century plan and drawing of this aqueduct by Pococke see N. Jidejian, *Tyre through the Ages*, Beirut, 1969, Plate 3. See also facing map, Plate 6.

⁴ *RHC (Or)*, p. 456.

⁵ Le Strange, 1890, p. 346.

⁶ See Y. Olami and Y. Peleg, "The Water Supply System of Caesarea", *IEJ* 27 (1977), p. 137.

⁷ In a brief description of bathing at Canterbury in the eleventh century, Lanfranc refers to the brothers assembling in the cloister, then, under charge of the senior monk taken to the bathhouse where each monk undressed, entered a cubicle behind a curtain, took a short bath in silence, then rose, dressed and returned to the cloister. See D. Knowles (ed.), *The Monastic Constitutions of Lanfranc*, London 1951, p. 10.

hygiene, "They do not cleanse or bathe themselves more than once or twice a year, and then in cold water, and they do not wash their garments from the time they put them on until they fall to pieces."⁸ In rural settlements in the West bathing was extremely intermittent. For the villagers of Montaillou for example, visits to the springs at Ax-les-Thermes were made either to sell sheep or visit a prostitute, the only people actually using the baths being lepers and people suffering from ringworm.⁹ Where it did take place (mainly in the larger cities such as Paris which had some 26 public bathhouses in the late thirteenth century), bathing had a somewhat sordid reputation. Not for nothing the term for bathhouses in medieval sources is sometimes synonymous with the term for brothel: *bordello*, *bordel-eau* or *bordiau* in Old French and *steue* (stew = broth = brothel) in medieval English which was used for example in the fourteenth century and possibly earlier to describe the area in Southwark, London (*the Stews*), where legal brothels were located.¹⁰ In medieval illustrations in the West the bathhouse was shown as a place of intimacy and with no sexual segregation.¹¹ It would appear that the Franks introduced these customs to the East, and Usamah ibn Munqidh (1095–1188) revealed some aspects of this activity in a colourful description of Franks in bathhouses recorded by the Muslims. He describes a Frankish knight attending a bathhouse at Ma'arat al-Numan, south of Antioch who sent for his wife to join him—unacceptable behaviour in Usamah's eyes. Another story refers to a bathhouse in Tyre where a Frank was accompanied by his daughter to the baths, also clearly not an accepted mode of behaviour in Muslim society.¹² It would seem that in Frankish society in the East bathing became an acceptable part of daily life and a more frequent activity among Franks at all levels of society.

It was considered a desirable and important privilege to be granted the use of a bathhouse. In the early 1220s, in order to develop

⁸ Al-Qazwini, *Athar al-bilad*, trans. B. Lewis, *Islam from the Prophet Muhammad to the Capture of Constantinople*, vol. 2, 1974, p. 123.

⁹ Le Roy Ladurie, 1984, pp. 141–2.

¹⁰ The distinction in the Middle Ages is not always entirely clear. There is reference to a house with a *bordello* in twelfth century Antioch which is located next to a bathhouse—Bresc-Bautier 1986, no. 73. On the area known as "the Stews" see C. Beattie, "Governing Bodies: Law Courts, Male Householders, and Single Women in Late Medieval England", in C. Beattie et al., *The Medieval Household in Christian Europe c. 850–c. 1550*, Turnhout, 2003, p. 200 and n. 3.

¹¹ See illustration in Gimpel, 1976, opposite p. 91.

¹² Usamah Ibn Munqidh, pp. 165–66.

commercial activity in Beirut, John of Beirut granted the Genoese a number of privileges, among them the exclusive use of his baths once a week.¹³ Nor was bathing restricted to the lay community; bathing became an acceptable and even expected practice in monasteries and in Military Order communities, although there were clear restrictions. Although the Orthodox Syrian patriarch Michael the Syrian (1133–99) described the Templars as not going to the baths and the Templar Rule contains no reference to bathing or to the bathhouse, Theoderich refers to the presence of baths in their compound on the Temple Mount in Jerusalem, and excavations uncovered a bathhouse in the *faubourg* at Chateau Pelerin.¹⁴ The Rule of the Hospital contains references, albeit of a constricting nature, including a statute of Fr. William de Villaret which states that brothers must go to the bathhouse only if it is necessary and then must inform the bailiff.¹⁵ They must go in groups of three or four together and may not eat or sleep there.¹⁶ From this latter regulation we may surmise that lay people were probably in the habit of eating and sleeping in the bathhouses. There were additional restrictions regarding outlandish behaviour by the brothers on the way to or at the bathhouse. In a statute dating to 1270 it was forbidden for the brothers to play trumpets and drums during celebrations when they were on their way from the bathhouse in Acre to the auberge.¹⁷ The bathhouse was indeed regarded as a place of recreation.¹⁸ The Hospitallers had bathhouses in Jerusalem, Acre and Antioch and in some of their castles, including Belvoir. Some monasteries possessed bathhouses as property, not specifically for their own use. In 1152 the monastery of St. Mary of the Valley of Jehoshaphat was granted a bathhouse in Jerusalem by Baldwin III which the brothers may have used as it was not all that distant from their house, but it seems likely that it was primarily regarded as a financial asset bringing in funds from its use by the citizens of Jerusalem, just as did the their shops, mills, bakeries and other institutions.¹⁹ Running a bathhouse was a profitable business; in mid-thirteenth century three bathhouses in Tyre were

¹³ Riley-Smith, 1973, p. 77.

¹⁴ Michael the Syrian, *Chronicle*, p. 596, (III, p. 201); Theoderich, p. 165; Johns, 1997 (2), pp. 124–28.

¹⁵ King, no. 19, p. 107.

¹⁶ *Ibid.*, p. 107.

¹⁷ *Ibid.*, no 19, pp. 77–78; *Cart. gén. Hosp.*, no 3396.

¹⁸ King, no. 102, p. 181.

¹⁹ Delaborde, no. 29.

yielding an annual income of 265 bezants to their Venetian owners.²⁰ Private bathing facilities were not generally found in individual houses; people wishing to bathe would go to a public bathhouse. In cities with a mixed population these facilities were used by all. Ibn Jubayr mentions the attendant who looked after the clothes of the bathers.²¹ He notes that in Tiberias (which he did not actually visit) in one of the bathhouses the hot water that gushed from the ground was used for cooking purposes.²² Al-Idrisi noted that hot water from a bathhouse in Tiberias was distributed among the houses for washing purposes.²³

In Jerusalem, a number of bathhouses are recorded—one, mentioned above, granted to the monastery of St. Mary in the Valley of Jehoshaphat, was located in the north-east quarter of Juiverie. Perhaps this was the same bathhouse located adjacent to the Lions' Gate, until recently in use.²⁴ Another was the Patriarch's bathhouse, which was located south of the Hospital of St. John and functioned into the nineteenth century.²⁵ Partial remains of a medieval bathhouse were uncovered in excavations adjacent to a building tentatively identified as the Church of St. Peter in Chains near the medieval Gate of Mount Zion but were not securely dated to the Crusader period.²⁶ In Acre a bathhouse was uncovered in the northern suburb of Montmusard, probably adjacent to the Hospitallers *auberge* (the brothers' living quarters) (Figure 55).²⁷ Its location near the shore and close to where the *auberge* must have been located suggests that this may have been the Hospitaller's bathhouse mentioned in the Rule.²⁸ The bathhouse in the *faubourg* of Chastiau Pelerin ('Atlit) was excavated by Johns in 1930–31. It was constructed in what had previously been a private house which underwent certain structural changes to convert it to use as a bathhouse. The layout of this bathhouse is decidedly Muslim; like a typical Muslim *hammam* it is divided into two distinct parallel areas to ensure complete privacy for the bathers. The northern part of the structure was chiefly taken up by a dressing room that had plastered

²⁰ Berggötz, p. 146.

²¹ Ibn Jubayr, p. 265.

²² Le Strange, 1890, p. 338.

²³ Ibid.

²⁴ See Boas, 2001, p. 162.

²⁵ Ibid., p. 162.

²⁶ Ibid. and see Avigad, 1983, p. 250.

²⁷ Personal communication, E. Stern (publication in preparation).

²⁸ King, no. 19, p. 77.



Figure 55. Bathhouse excavated in Montmusard, Acre (photograph by Howard Smithline, courtesy of Eliezer Stern, IAA).

benches against the walls on three sides and a large cold water basin at the centre. A passage led to a vestibule, and the steam area was located on an east-west axis, built over a hypocaust and divided into two rooms with the furnace at the east end.²⁹ In Antioch a number of bathhouses are recorded including the *balnea Tancredi*, the *balnea dicta Omar*³⁰ and two bathhouses of the Hospitallers.³¹

C: *Fountains*

Fountains in towns were placed at gates and in the main thoroughfares to provide travellers and itinerant merchants with water for drinking and washing. In St. Steven's Gate in Jerusalem there were cisterns that supplied fountains for public use. Excavations in the gate area

²⁹ Johns, 1997 (2), pp. 124–27, Figs. 22–24.

³⁰ Krijnie N. Ciggaar, “Adaptation to Oriental Life by Rulers in and Around Antioch” in, K. Ciggaar and M. Metcalf (eds.), *East and West in the Medieval Eastern Mediterranean*, Leuven, 2006, p. 265.

³¹ C. Cahen *La Syrie du Nord* p. 522; Bresc-Bautier, 1984, nos. 73, 76; Riley-Smith 1973, pp. 76, 81, 84, 85.

uncovered a rectangular stone fountainhead with a cylindrical spout on which was a mason's mark in the form of a key.³² In 1184 during a period of drought a philanthropist named Germanicus (Germain) carried out civic works intended to improve the supply of water to Jerusalem. Amongst these he is recorded to have built three fountains in the city. According to a thirteenth century description he had marble basins set into the walls that were kept full of drinking water and two cups were attached to them by chains.³³ In monasteries, fountains were generally located in the cloisters near the refectory so that the brothers could wash their hands before going in to meals. At Bethgibelin, what may have been a fountain was uncovered at the entrance to the refectory.³⁴

D: *Urban Sewage Systems*

At present there is no clear-cut evidence for the existence of an urban sewage system in any of the Frankish towns, but there are a number of localised finds in Acre suggesting that the Frankish town may have had such a system. It is clear in any case that individual institutions had well-constructed sewage disposal systems, with sewage either deposited into septic pits or disposed of in more elaborate systems such as the one located under the Hospitaller compound. Here sewage from the latrines was carried by a series of well-constructed large stone-lined passages, apparently emptying into the harbour to the southeast. This system is not unlike that found in some of the larger monastic houses in the West, for example, in Kirkstall Abbey in England and Paisley Monastery in Scotland.

³² See photograph in Pringle, 1997, p. 56, Plate 45.

³³ P.W. Edbury, *The Conquest of Jerusalem and the Third Crusade*, Aldershot, 1996, p. 16.

³⁴ A. Kloner and M. Cohen, "The Crusader Fortress at Beth Guvrin", *Qadmoniot* 33 (2000) (Hebrew), p. 36.

CHAPTER NINE

STORAGE SPACE, STABLES AND SHELTERS FOR LIVESTOCK

A: *Storage Space*

All domestic buildings contained storage space, which could vary considerably in size according to the particular needs and the number of occupants. Huge vaulted spaces were available on the ground-floor level of several buildings in the Military Order compounds at Jerusalem and Acre; notable are the ground-floor halls of the palace and the so-called “knight’s halls”.¹ Monastic cloistral compounds generally had a storage wing or cellar. In the monastery at Bethany, in a hall located on the southern side of the courtyard between the east and west churches and adjacent to the kitchens, was a store-room possibly used for storing wooden barrels of wine, as is indicated by stone benches set on the floor with concave depressions cut in their upper surfaces.² In the Italian merchant communes of Acre and Tyre storage rooms occupied the entire ground floor of the *palacia*. Here the merchants stored the goods brought by them from the West until they were sold or shifted on and also the goods they purchased in the East prior to transporting them back to Europe. Surviving examples of these storage halls vary in size from 138 to 382.5 square m. (Figure 56). They are high, averaging about 6 or 7 m., and are roofed with groin vaulting supported on massive stone piers. The use of groin vaults rather than barrel vaults allowed for several broad arched doors to be opened in the side walls through which merchandise could be brought in and subsequently sold onto the street. An example of such a hall is house 1:5 in the Genoese quarter of Acre which had large openings onto the adjoining covered street. The presence of three broad adjacent doorways supports their identification as shop openings as a single doorway would otherwise have sufficed. The side of the hall (west) adjacent to the street would have served for the sale of goods, the remainder of the hall for

¹ For a photograph of the former see Stern, 2000 (Hebrew), p. 11.

² Saller, 1957, p. 104, Plate 46.



Figure 56. Groin-vaulted hall of 'Palace in Pisan quarter, Acre (photograph by author).

storage. Both the Venetian and Genoese property lists refer to such arrangements. For example, the Venetian palace of the *bailli* had six large shops on its ground floor, and the *Great Palace of the Fondaco* had as many as 16!³ The number of free-standing piers and bays in these storerooms varies from a single central pier supporting four bays as in house 1:10 in the Pisan quarter to six piers and 12 bays in house 1:5 in the Genoese quarter.

Storage on a smaller scale can be seen in house 3:2 in Caesarea, which had what may have been a *sirdāb*, that is, a partially underground room used for storing items away from the heat. This may have been a feature left over from the Fatimid period in a house that the Franks occupied in the twelfth century and partly rebuilt and expanded in the thirteenth century. Large stone-lined silos located in the floors of houses in Caesarea also originated in the Fatimid period and were used by the Franks, who may also have built such installations themselves. In village houses such as those in al-Kurum there were occasionally undercrofts cut or partly cut into the bedrock. Storage in rural

³ Prawer, 1980, p. 233.

buildings could sometimes occupy quite large expanses. Farmhouses had to have ample storage space for farm produce as did the rural estate centres built specifically to serve as storage depots for produce and manufactured goods collected as taxes paid in kind by the local farmers. The amount of this storage space in such buildings could vary greatly, and in the case of the estate centres expanded considerably over the years as Frankish control over the countryside improved, tax collecting became more efficient and greater quantities of produce were collected.

For personal use many houses both in towns and in villages had wall-cupboards or niches for the storage of household items. Cupboards were located along one wall in the first-floor hall in house 1:20 in the Genoese quarter of Acre. In Caesarea the arched space under a staircase in house 3:1 was used for storage (Figure 57), as were small wall-niches in some of the houses; and similar small wall-niches are found in several houses in the villages of al-Kurum and Parva Mahumaria (al-Qubaiba), in the farmhouse at Har Hozevim and at several other sites. These niches are generally quite small (c. 50 by 50 cm. and 50 cm. deep) and could only have served for the storage of such household items as tools, cooking utensils, clothing and bedding. Larger wall-cupboards are found in some houses at al-Kurum and Har Hozevim. At al-Kurum there is a large cupboard on the ground floor of house 12:3. At Har Hozevim a large plaster-lined cupboard was located adjacent to the door; it appears to have originally had a wooden door. Several large wall-cupboards are located on the ground floor of the hall-house of Khirbat Burj above al-Kurum. In al-Kurum itself, in addition to wall-cupboards and niches, narrow stone benches line the walls of several of the houses (Figure 58). These most likely served as a type of open storage space rather than for seating, being too low and narrow for comfort.

Storage space could be used for any number of items. The Venetian property list refers to the storage of timber, chalk and stone.⁴ Storage in closets and niches in private houses would have been for household items, storage of foodstuffs was in jars, amphorae and pithoi, sometimes placed in undercrofts beneath the houses. Drinking water was occasionally stored in large jars; at Chastiau Pelerin Johns found three

⁴ Berggötz, p. 177.



Figure 57. Cupboard under staircase in house in Caesarea
(photograph by author).



Figure 58. Plastered bench in house in al-Kurum (photograph by author).

large water jars, possibly imported from Spain, stamped with rosettes on the shoulders and partly glazed with a green lead glaze.⁵

B: Stables and Byres

Horses, camels and mules were used as a means of transport, as pack animals and for ploughing and other work in the field.⁶ In addition they carried out certain domestic labour tasks such as raising water from a well or powering a mill. Evidence for them can be seen in the remains of stables and byres. A barrel-vaulted stable of Crusader date is located in Jerusalem in the complex of the Khān al-Sultān, a Mamluk structure with various earlier (Frankish) elements located at

⁵ They are now located in the Rockefeller Museum in Jerusalem. See Johns, 1997 (2), p. 122, Plate 44.3–4, Fig. 20.

⁶ Jacoby notes that donkeys and camels were so basic a means of transportation that the tax on many items at the *fonde* was calculated by donkey or camel load. See Jacoby, 2005, p. 90.

the junction of the Vicus Templi and the Cardo.⁷ This stable which measures 6.5 by 15.8/16.3 m. is entered via a passage from the market street to the east. Several stones have Frankish masons' marks and diagonal tooling. Troughs were built along the eastern and western (long) walls, and there are three square ventilation openings in the crown of the vault. A room at the front of house 3:3 in Caesarea apparently served as a stable; this is evidenced by tie-holes in the walls. In the farmhouse at Har Hozevim a small vaulted room containing a trough on the right-hand side of the door of the hall-house was apparently used as a stable. Horses and pack animals were sometimes tied up in the street in front of the house. In the covered street that runs adjacent to the eastern city wall of Caesarea, a number of tie-holes can be seen pierced through the bases of arches supporting the roofing (Figure 59).

In several rural estate centres and farmhouses there are large barrel-vaulted structures that apparently were used for cattle and other livestock. In 1982 Benvenisti published a discussion of such structures, noticing what appears to have been the retention in modern Arabic nomenclature of what was originally a Frankish word—*bovaria* (Latin) *boverie* (Old French) meaning ox-shed, which had become in Arabic *al-babriyya* or *al-babariyya*.⁸ He discussed 11 such buildings located throughout the countryside of the kingdom. The preservation of an originally Frankish term and the fact that most of these buildings are clearly quite old and in a state of ruin suggests that the term does in fact denote the original use of these structures.

⁷ Burgoyne, 1987, pp. 480–81.

⁸ Benvenisti, 1982, pp. 130–52.



Figure 59. Tie-holes in covered street in Caesarea (photograph by author).

CHAPTER TEN

COURTYARDS AND GARDENS

A: *Courtyards*

Throughout the Near East courtyards were an almost mandatory feature in domestic buildings. In the crowded neighbourhoods of Frankish towns, internal courtyards or attached courtyards surrounded by high walls were considered essential (Figure 60). In urban and rural houses there was almost always some open space, however small, to serve one or more domestic functions. Many of even the smallest houses in Acre built on elongated plots had small courtyards set back behind a front room, and larger houses occasionally had more than one. The courtyard might be merely a quiet place for relaxation, protected from the harsh effects of the Middle Eastern climate. It might be a private place used to carry out certain household activities, a plot on which to grow fruit and vegetables and raise some livestock, or simply an open area representing a transition between public and private space. In many cases the Franks adopted *per se* the traditional Near Eastern courtyard-house design for their town houses, and the courtyard was a frequent feature of village houses, farms and rural estate administrative centres. The monastic courtyard design was adapted for use by the Military Orders in their large urban complexes such as those of Acre and Jerusalem and in their castles, where it provided a defended space that could be used for training and for various domestic activities. As with cloisters, it was as much a symbolic feature as a functional one, demonstrating the insular nature of monastic life.¹

¹ The courtyard seems to have been the pivot around which a particular type of architecture was developed by the Hospitallers. The layout and design of their buildings are, among the Military Orders, the most regular in design. If we compare for example the courtyards of three different types of Hospitaller buildings we find a similarity that suggests a model such as has been so far unsuccessfully sought by those wishing to identify distinctions between Hospitaller and Templar architecture. (The possibility of identifying distinct architecture of the two principal Military Orders has been raised in the past, but it was based mainly on a few poorly defended theories such as the preferred use of round towers by the Templars.) The Hospitaller buildings at Rhodes and Acre, the castle of Belvoir (and to a degree, the castle of Crac



Figure 60. Paved courtyard of house in Caymont (photograph by Sandu Manda, courtesy of Miriam Avissar, IAA).

The importance of the courtyard in the climatic, political and social environment of the region was not lost on the Frankish settlers although not all of these factors had the same degree of significance for Frankish society as they had in Islam. A fundamental role of the courtyard for Muslim society was in protecting the privacy of the family, in particular of the women and children. Although this was perhaps a less central theme in house design for the Frankish settlers, the need for a domestic environment protected from the extremes of Middle Eastern weather and secure from the threat of robbers was perhaps a more urgent consideration than it had been in the West.² A central courtyard in a house, particularly when the outer walls of the house were almost windowless, would create a more pleasant microclimate

des Chevaliers) and the manor house at Aqua Bella all share the same basic layout: a central courtyard, a staircase rising on arches and half arches to domestic quarters on the upper level and, in Belvoir and Aqua Bella, a balcony on one side overlooking the courtyard.

² Regarding the use of the courtyard-house design as a means of climate control see A. Badawy, "Architectural Provision against the Heat in the Orient", *JNES* 17 (1958), pp. 124–25; S. al-Azzawi, "Oriental Houses in Iraq", in P. Oliver (ed.), *Shelter and Society*, London, 1969, p. 92.

that infiltrated the surrounding rooms. A garden with shady trees and a fountain could reduce the temperature and increase the humidity of the air, providing protection from the sun, intense light, rain and, in particular, from the dust carried by desert winds.

The courtyard was generally, the location of the cistern supplying the household with water—for example, in house 3:2 in Caesarea or house 1:23 in Acre. If paved it also served as a collecting area for rainwater. As places of work, courtyards were used for a number of household activities including cooking and baking; sometimes they provided shelter for animals, and occasionally a latrine was located in a far corner—as for example in house 4:2 in Caymont (Yoque'am). In the manor houses courtyards became an essential feature as the need increased to provide enclosed storage space for goods and livestock and to house communal installations. The courtyard in such buildings could vary considerably in size; that of Aqua Bella measured only 13 by 14 m. whereas the courtyard at ar-Ram measured 27/21 by 38/29 m.

B: *Gardens*

Evidence for gardens is difficult to trace in archaeological finds. Gardens are occasionally referred to in contemporary sources, which make frequent mention of both the *zardinum* and the *hortus*—the latter being a small rural holding including house and kitchen-garden. In the towns, gardens would have been located in the courtyards of larger houses, and market gardens were located on the periphery of the built-up areas near city walls as well as outside them. William of Tyre records the "*horti irrigui*" (irrigated gardens) of Caesarea.³ This may well be a reference to the fruit and vegetable gardens outside the town walls that are recorded in earlier sources such as Naser-e Khusraw.⁴ The Templar of Tyre describes gardens at Acre outside the walls, with garden towers (watchtowers) and mills.⁵ There were also gardens within the city, including perhaps in the open areas between the double walls and adjacent to the inner walls. The maps of thirteenth century Acre show what appear to be open spaces adjacent to the walls, and the name S. Romanus in Zardini (St. Roman of the

³ WT 10.15.

⁴ Naser-i Khusrau, p. 20.

⁵ Templar of Tyre, p. 55 (353).

Gardens) appears in the north-east corner of the city identifying the nature of that area.⁶ There is also mention of a Genoese garden located close to the city wall and the sea-shore.⁷

There would certainly have been gardens in palaces and some of the larger courtyard houses. Like courtyards, gardens had wells, cisterns and reservoirs,⁸ and like the Arab *bustan*, they were used mostly for growing fruit trees and vegetables for the use of the tenants.⁹ A fifteenth century description of a garden adjacent to what may have been for a period in the middle of the twelfth century the royal palace in Jerusalem may be fictional and in any case because of the late date must be considered with reservation. It mentions a garden with orange trees and pomegranates.¹⁰

In the Frankish planned street-villages the garden plot or croft behind the house was an integral part of the living area, being an extension of the house itself. In the East this was perhaps even more true than in Europe, where there was in any case space for gardening in the toft (house plot), which unlike in the East was not entirely taken up by the house. In the village of al-Kurum some of the medieval crofts have survived, bounded by dry fieldstone masonry terracing extending behind the house from its side walls. These plots measure 8 by 46 m. on average (368 square m.).¹¹ They would have provided the daily needs of the family and would have been used to raise chickens and small livestock, to grow fruit and vegetables and perhaps to keep domestic animals.¹²

⁶ Dichter, 1973, pp. 21–4, 26–7, 29–30.

⁷ Jacoby 2005, p. 78, n. 16. Jacoby suggests this was located in Montmusard as the Genoese quarter did not reach either the sea-shore or the city wall. If he is correct the garden could only have been located in one place, in the very north of the suburb (there was no sea wall in Acre so it would have had to be located where the land wall reached the shore). Another possibility is that it was located at the only other place in the city where the city wall reached the sea—not in Montmusard but in the east where the eastern city wall reaches the shore to the south. Alternatively it may have been in either of these locations but outside the city wall as the Genoese owned land outside of Acre.

⁸ *Cart. gén. Hosp.*, nos. 84, 225, 391; Bresc-Bautier, no. 137.

⁹ *Cart. gén. Hosp.*, no. 521; Bresc-Bautier, no. 179; Kohler, no. 64.

¹⁰ Felix Fabri, p. 394.

¹¹ Boas, 1996, p. 586.

¹² Bones found in urban and rural sites as well as in castles show that people kept domestic animals. At the Red Tower in the Sharon excavators found two cat bones and the bones of seven dogs, this in spite of the fact that a Hospitaller statute drawn up at Limasol in 1302 states that no brother or esquire may have or keep a dog of his own. See Pringle, 1986, pp. 77–80; King, no. 2, p. 121.

CHAPTER ELEVEN

NON-FRANKISH HOUSING IN THE LATIN EAST

One topic that has not been regarded so far is the housing of the non-Frankish population under Crusader rule. In spite of the fact that Muslims and Eastern Christians made up a fair portion of the population in many cities and the vast majority of the rural population throughout the Latin states, we have very little information regarding the nature of their settlements and houses. There is no way of identifying the houses of the non-Frankish population in the cities, where we have at present no knowledge of the divisions between neighbourhoods and populations. However it is possible, by examining the historical sources, architecture and small finds, to identify villages in Frankish-held territory that had a non-Frankish population. For example, the presence in a village of a mosque or an Eastern-type parish church (with four central piers supporting a cupola) is one means of identifying the ethnicity of the population. Unfortunately, few such sites have been excavated and fewer still have been discussed in any depth in publications. By examining three examples of such sites we can perhaps draw some basic conclusions.

Horvat Bet Zeneta is located about 10.5 km. inland from the Mediterranean coast, south-east of Akhziv, Khirbat Ka'kul is a few kilometres north of Jerusalem and Horvat Shari is about 15 km. east of Jaffa. Three villages at such widespread locations might be considered representative of similar villages throughout the region. Horvat Bet Zeneta is located on the Ga'aton Stream which runs west through the Western Galilee emptying into the Mediterranean at modern Nahariah, south of Akhziv (Frankish Castellum Imbert).¹ It may be identified with a settlement called Zoenite (Khirbat Zuweinita) in the lands of Castellum Regis² or alternatively with Sivenete 3.5 km. west of Castellum Regis on the road to Acre.³ The village remains have been

¹ Horvat Bet Zeneta was excavated by N. Gatzov and H. Abu 'Uqsa in 1993.

² R. Frankel, "Topographical Notes on the Territory of Acre in the Crusader Period", *IEJ* 38.4 (1988), p. 263.

³ Ellenblum, 1998, p. 49.

dated on the basis of ceramic and numismatic finds to the thirteenth century. The site and its houses show no evidence of planning such as is found in several of the Frankish sites examined but rather of an organic spread of rooms more typical of traditional Near Eastern settlements. The houses are single-room structures each of which has a door opening onto an enclosed courtyard. No adjoining rooms opening onto one another were found on this site. According to the archaeologist some rooms served as dwellings, others as storage and work spaces.⁴ The construction was of fieldstones with a *debesh* fill of small stones and mortar. In most of these houses the floor was formed on the bedrock after the clearing of earlier material. In a few cases the surface was levelled using stone flags. Others had packed-earth floors. Threshold stones with an axle hole on one side (the right-hand for someone entering the room) were found in most doorways. Doorposts were of flat stones, in one case with a slot for a locking mechanism. Doors would have been of wood, and bent nails from these were found in one of the doorways. Some rooms had low partitions built of stones placed on their sides to separate different areas of the room. One very narrow wall made of a single row of flat stones placed end to end (room 2) may have formed the base of a wooden or cane partition wall. Small stone bins were found in two rooms, also constructed of stones placed on their sides. There were also raised platforms constructed next to walls, the function of which is unclear. *Tabuns* were found in two of the courtyards, and a square-shaped vaulted cistern lined with two thick layers of hydraulic plaster was located between some of the houses.

Khirbat Ka'kul is located in a northern neighbourhood of Jerusalem known as Pisgat Ze'ev.⁵ It has not been identified with a name from the Frankish period. However, finds from the excavations show that it was probably settled in the twelfth century.⁶ The section excavated consists of four adjoining barrel-vaulted rooms (Figure 61). All opened to the east except for one that opened to the south. They were built with thick walls (up to 1.8 m.) of fieldstone and chip construction with a *debesh*

⁴ N. Getzov, "An Excavation at Horbat Bet Zeneta", *Atiqot* 39, 2000 (Hebrew), p. 87.

⁵ The village was excavated in 1991 by J. Seligman of the IAA. See J. Seligman, "Jerusalem, Khirbat Ka'kul (Pisgat Ze'ev H): Early Roman Farmstead and a Medieval Village", *Atiqot* 54 (2006), pp. 1–73.

⁶ *Ibid.*, p. 46.



Figure 61. Houses excavated in village of Ka'akul (photograph by Sandu Manda, courtesy of Jon Seligman, IAA).

fill. The vaults were built with rubble and mortar. Floors were plastered and in one case a floor was formed of packed debris. In one vault there was a small underground vault, possibly a *matmura*. In another there was a barrel-shaped installation of uncertain use which was fed by a pipe. A Jewish ritual bath (*miqwa*) from the Roman period was reused in the medieval settlement as a cistern. It was barrel-vaulted over and plastered with hydraulic plaster.

The third village, Horvat Shari (or Nabi Ta'ari) is located on the route from Egypt to Damascus as it passes between Lydda (Diospolis) and Mirabel (Afeq, Antipatris) close to the western foothills of the Samarian Highlands. Five separate excavations have taken place at this site since 1996.⁷ The areas excavated form a large conglomeration of rectangular rooms and courtyards form a structure of uncertain dimensions, well constructed, with floors of plaster or flagstones and walls of a single layer of hard limestone or dolomite quarried on the nearby hills.

These three villages are perhaps typical of the non-Frankish rural settlements. Their lack of regularity in layout is the salient characteristic when comparing them to Frankish village houses, but we can also record a comparative lack of regularity in their construction. The houses of Horvat Shari and Horvat Bet Zeneta in particular show little uniformity, not only in the overall layout of the settlement but also in the shape and size of the individual rooms and the thickness and construction of their walls. Khirbat Ka'kul is perhaps closer to Frankish village houses in its quality of wall construction and regularity of layout.

⁷ See F. Vitto and O. Sion, "Horvat Shari (Nebi Ta'ari)", *ESI* 109 (1999), pp. 51–52, plan on p. 74; O. Abd' Rabo, "Horvat Shari", *ESI* 114 (2002) pp. 44–45; O. Sion, "Horvat Shari (Nebi Thari)—An Islamic/Crusader Period Village on the Via Maris" in *Judean and Samaria Research Studies* 15 (ed. Y. Eshel), Ariel (2006) (Hebrew), pp. 185–201.

CHAPTER TWELVE

URBAN NEIGHBOURHOODS AND STREETS

Neighbourhoods in Frankish cities could be organised according to the ethnic origin of the citizens, their association with a particular organisation, their profession or their social status and financial position.¹ In Jerusalem the Latin Christians, mostly of French origin, were spread over much of the city but among them, in the north-west Patriarch's quarter for example, were also scattered small communities of Copts, Greek Orthodox and others as well as the Knights of the Order of the Hospital of St. John. The Armenian Christians occupied the south-west quarter of the city that they retain today, but in that area was also a neighbourhood of Eastern Christians (Syrians) and possibly a neighbourhood of settlers from Provence. Eastern Christians were also located east of the Street of Judas' Arch and in the quarter that had once been the Jewish quarter and still retained that name—Juiverie or Judaria—in the north-east. In this quarter there was also the important Benedictine monastic community of the Church of St. Anne. In the south-east there were various communities, the best known being the Germans who set up their hospital there in the 1140s. On the northern part of the Temple Mount was the Augustinian monastic house connected to the Templum Domini (Dome of the Rock) and to the south was the large Templar establishment centred around the Templum Salomonis (al-Aqsa Mosque). Lepers, now organised as a Military Order (the Order of St. Lazarus), occupied the area outside the city walls from the north-west corner east along the northern wall as far as St. Stephan's Gate and south along the western wall as far as David's Gate. Also outside the city walls were various monastic communities, the important ones being the Augustinians of St. Mary of Mount Zion and of the Church of the Ascension on the Mount of Olives, and the Benedictine brothers at St. Mary in the Valley of Jehoshaphat.

¹ A somewhat problematic attempt at neighbourhood division in Acre has been attempted by Dichter, 1993.

In thirteenth century Acre communal divisions within the city were even more complex. The three Italian maritime communes had distinct quarters that in the thirteenth century were surrounded by gated walls and were autonomous units.² All five Military Orders had quarters in the city, the Hospitallers against the old northern wall and in a second location on the coast in the northern suburb of Montmusard, the Templars on the shore in the south-west of the city and also in two locations in Montmusard, the Teutonic Order in the east against the city walls, the Leper Knights in the far north of Montmusard and the Knights of St. Thomas adjacent to them along the diagonal wall of the *faubourg*. In addition there was a quarter of the Patriarch, a quarter of merchants from Provence and numerous monasteries including the Carmelites, Franciscans, Dominicans and several others. The city had quarters of butchers and fishmongers, and no doubt many trades were organised into their own areas. This situation was repeated on a smaller scale in most of the other cities. There is no clear-cut evidence for any urban segregation based on social class although such divisions may have existed.

If we consider what would be included among the principal components that made up a neighbourhood in a Frankish town, basing ourselves on the written sources, medieval maps and archaeological finds, we can draw a reasonably detailed picture of a neighbourhood in a Crusader town. The agreement between the Venetians and the Patriarch of Jerusalem in 1123 (*pactum Warmundi*) outlining what the Venetians would receive as a reward for the participation of their fleet in the occupation of either of the two cities still held by the Fatimids; Tyre or Ascalon; included a church, a main thoroughfare, a square and various communal installations—a bathhouse, a mill and a bakery.³ To these we can add the administrative palace, market streets, a cemetery, fortifications including a tower, gardens, a part of the harbour installations, perhaps water and sewage installations and of course the houses themselves.

As its role was so central and frequently determined the design of the houses in both urban and rural settlements, it is worthwhile to take a closer look at one of these elements—the street (*vicus* or *ruga*). Streets in the towns and villages in the Latin East were fairly straight (compared to those in some Muslim cities, but, like the latter tended

² See Prawer, 1972, p. 85.

³ WT 12.25.

to be quite narrow. There are no equivalents to the broad main thoroughfares of the Roman and Byzantine periods, and the straightness of the medieval roads is often the outcome of their having retained the old alignments. This is true not only in cities (for example the medieval market streets on the old *Cardo* in Jerusalem) but in villages such as Parva Mahumaria (al-Qubaiba) which was built on a Roman road. Alex Kesten notes that in the case of a street on the western side of Acre, in what he called the “Rectangular quarter”, the otherwise straight layout was broken by a series of realignments which he suggests was a defensive matter; that is, the slight change in alignment would have prevented the rapid movement of an enemy down the street and would have enabled defenders to establish defensive positions along its length.⁴ Another, perhaps no less logical explanation is that this was a measure taken to protect the inhabitants and their possessions from bad weather. Describing the streets in Western cities, Arsenio Frugoni noted that goods were on display in stalls and shops unprotected by windows, and concluded that the irregularities of the street plan could have been a deliberate artifice intended “to break the force of the winter wind and to give shelter from the summer sun.”⁵ Another means of protecting the streets from the elements was by covering them with stone vaults. Such covered streets are present in most Frankish towns and occasionally are recorded in documents and by pilgrims; there are references to covered streets in Acre and Jerusalem, and the German pilgrim Theoderich was duly impressed by the vaulted and stone-paved streets of Jerusalem.⁶

Regarding their width, even the main streets in major Frankish cities are generally no more than about 4 to 6 m. wide. In this they follow to some degree the Islamic practice of preferring narrow streets even when built on the framework of a classical cityscape. Thus the market street built on the Jerusalem *Cardo* in the Early Islamic period, and subsequently the Frankish rebuilding of it in the twelfth and thirteenth centuries, declines from a single broad thoroughfare with a paved street and broad covered sidewalks which had a total width of 22.5 m. to a group of three comparatively narrow parallel streets that might better be described as lanes (Figure 62). In 1152 Queen Melisende brought Muslim workers to rebuild the Islamic triple market in the section

⁴ Kesten, in Dichter, 1973, p. 79.

⁵ See Frugoni, 2005, p. 3.

⁶ Theoderich, p. 146.



Figure 62. Vaulted street in Jerusalem (photograph by author).

north of David Street, in the form of three parallel covered streets vaulted with varying forms of groin vaults and with rows of small shops between them.⁷ The western and the central streets are of the same width, c. 2 m. while the eastern street is wider; c. 3 m. but is the shortest of the three, only c. 75 m. long (about half the length of the other two). The central street, Malquisinat, has the most impressive vaulting of the three; groin-vaulted bays separated by transverse arches with occasional large square openings. These originally had louvered lanterns above for light and air, a particular necessity in a street where there would have been a great deal of smoke and smells. The original paving of these streets has long been replaced. There were a number of narrow streets in the Hospitaller compound, some of which appear on the plans of Conrad Schick published in 1902.⁸

Narrow streets adjacent to houses were exposed in the north-west of the walled city of Acre (Ha-Abirim Parking Lot) excavated in 1995 and 2007. One of these (in Area E) was 2.5 m. wide and was paved with plaster embedded with small pebbles.⁹ A covered street in Caymont located between a tower and houses, was 5 to 6 m. wide and had pointed barrel vaulting of hewn stones bonded with grey mortar. The paving was a beaten earth floor mixed with gravel.

Street names in this period are descriptive rather than, as is frequently the case today, commemorative. They are often named for the commerce conducted in them or for the institutions they contained. Thus in Jerusalem there were, for example, the Street of the Furriers (Vicus Pellipariorum), the Street of Bad Cooking (Malquisinat, also known as the Street of the Cooks—Vicus Coquinatus) and the Street of the Bathhouse (Ruga Balmanorum), while Acre had, for example, a Street of Cooking Pot Makers (Ruga Calderariorum).¹⁰ Many of the streets are named according to where they led. Thus in Jerusalem we hear of David Street—the east-west thoroughfare which led from David's Tower (Turris David) to the Temple (Templum Domini) and was known as the Vicus ad Templum Domini. Patriarch's Street (Ruga Patriarchae) led through the Patriarch's quarter to the Palace of the Patriarch at its northern end. The Street of Mount Zion (Vicus ad Porta

⁷ Bresc-Bautier, no. 36.

⁸ Conrad Schick, "The Muristan, or the Site of the Hospital of St John at Jerusalem", *PEFQS* 34 (1902), facing p. 46.

⁹ Sion and Tatcher, 2000, p. 14.

¹⁰ Strehlke, no. 92.

Montis Sion) and the Street to the Gate of the Valley of Jehoshaphat (Vicus ad Porta Valis Josaphat) are other examples. As noted, in Acre and elsewhere a vaulted street was sometimes named “Covered Street” (Ruga or Via Cooperta)¹¹ and Carrubium is a street name deriving from the medieval Latin for “a street leading to a crossroad”.¹² In 1992 a section of the Ruga Cooperta in Acre was cleared by the IAA.¹³ This section is constructed with pointed groin vaulting and has deep niches on its northern side, possibly intended for displaying goods and openings into houses along its southern side. Underground streets were constructed in both the Templar and Hospitaller compounds, the so-called “Templars’ Tunnel”—a street giving access from the palace to the port—being one exceptional example; and underground passages are located under the Hospitaller compound. There were additional subterranean streets in the city, one example being exposed to the east of the Turkish city walls beneath the Israel Nautical School and another somewhat further to the east.¹⁴ Two streets located in Montmusard were the Street of Bethlehem and the Street of Saphoria (Ruga Bethleemitana and Ruga de Saphorie), although *ruga* here could alternatively mean neighbourhood or quarter.¹⁵ A partly covered street was exposed in excavations alongside the eastern wall of Caesarea (Figure 63) that is similar in appearance to a covered street in Famagusta (Figure 15). In Nicosia there was a “Covered Street”, a street of shops lined with porticos that began at the Castle and ran as far as the palace and the lower square.¹⁶ Village streets have been excavated at Parva Mahumaria (al-Qubaiba), Magna Mahumaria (al-Bira), al-Kurum and Wadi Haramiyya. The street that passed through the village of al-Kurum shows little evidence of having been surfaced in any way. Where it is at bedrock it is levelled off but not with a great deal of care, certainly not in comparison to Roman roads. Yet this may well have been a Roman road, as was the case at Parva Mahumaria.

¹¹ See Desimoni, pp. 216–17.

¹² See R. Mansi (ed.) *Lexicon Manuale ad Scriptores Mediae et Infimae Latinitatis*, Paris, 1884, p. 41.

¹³ Kedar and Stern, 1995, pp. 105–11.

¹⁴ Kedar, 1997, pp. 171–73.

¹⁵ See Niermeyer and Van de Kieft, 2002, vol. 2, p. 1205.

¹⁶ Enlart, 1987, pp. 402–3.



Figure 63. Covered street in Caesarea (photograph by author).

CHAPTER THIRTEEN

LIVING CONDITIONS IN FRANKISH CITIES: OVERCROWDING AND POLLUTION

According to Ibn Jubayr, writing after returning from his pilgrimage to the East in 1185, Acre's roads and streets were "choked by the press of men, so that it is hard to put foot to ground".¹ Evidence for overcrowding in some Frankish cities can be found in other contemporary sources as well as in archaeological remains. The natural tendency for thriving urban settlements was to expand up to the walls and then beyond them. In the medieval West this phenomenon was typical of many successful towns which developed *faubourgs* (suburbs outside the walls) and then fortified them, sometimes spreading yet further and fortifying yet again. The use of the term *burgus novus*, which is found in conjunction with some Frankish cities in the East, points to this type of expansion of cities beyond their old walls. The most pronounced case was Acre, which expanded well beyond its old walls and then fortified its new suburb of Montmusard; and a similar development on a smaller scale could be found in Jaffa and Nablus.

It would seem that in the West this type of expansion eventually declined in the late Middle Ages, when the vitality of urban growth had somewhat abated, and in its place came expansion within the walls in open spaces, courtyards and gardens.² Both of these ways of dealing with population growth are found in Frankish Acre, but here the process was greatly speeded up. The rapid pace of growth of Acre, which had been promoted by the loss of the cities of the hinterland in 1187, resulted in these two types of development taking place consecutively. Probably at the same time that Acre expanded up to 750 m. north of its old wall and eastward nearly all the way to the ancient tell, houses within the city were being added on to or having their courtyards occupied.³ In the preserved ground floor of a medieval house in the

¹ Ibn Jubayr, p. 318.

² See Furgone, 2005, p. 3. In the Near East a similar development had occurred in the late Byzantine and early Islamic period in cities like Jerusalem and Baisan.

³ Prawer notes that the Genoese quarter, which he estimated as covering an area of c. 6.5 ha, was quite crowded with 64 houses recorded in the property list of 1249. See Prawer 1980, p. 240.

Genoese quarter (house 1:8) a steady process of expansion into the courtyard can be observed; and overcrowding would also explain the phenomenon of houses protruding out over the moat.⁴ It may be that this phenomenon was at first a makeshift measure, easier to carry out (and consequently cheaper) and safer than constructing entirely new houses outside the protection of the city walls. Another possible answer to the need to house a rapidly growing population would be to make use of open areas within the city walls. Building appears to have spread into the open fields and gardens within and adjacent to the city walls. Jacoby suggests that the area labeled “Boverel” on the medieval maps, which he identifies as the Templar stables, was built over with a planned street and houses soon after 1191.⁵ However, this process of expansion inside and outside the city walls was uneven. As late as the second half of the thirteenth century there was an area occupied by tanners on the western side of Montmusard near the quarters of St Catherine and the Burgus Templi, and considering the nature of that industry and its filth and unpleasant smells, it would seem unlikely that this particular area of Montmusard was built upon.⁶

In the West, deterioration of the environment caused by the growth of the urban populations and the development of medieval industries was already becoming a significant problem in the Middle Ages, although nowhere near on the scale caused later by the industrial revolution. Cities were beginning to suffer from atmospheric pollution as well, and the destruction of forests had in places already changed the face of the landscape.⁷ We lack records for similar developments in the Latin East, but from the sources we have we can conclude that here as

⁴ On house 1:8 in the Genoese quarter and a reference to a similar process in Cairo see below, pp. 271–74, n. 14. In a recent publication dealing with a neighbourhood on the old northern wall of the city near the Hospitallers’ compound and adjacent to the Porta Boverie Templi it was noted that one of the houses is recorded as “*protenditur in longum super fossatum civitatis*”, that is, protruding above the moat of the city. Pnina Arad, “Thanks to a Neighbour’s Bad Reputation: Reconstructing an Area of Thirteenth-Century Acre”, *Crusades*, vol. 5 (2006), n. 6.

⁵ Jacoby, 2005, pp. 77–8.

⁶ See in Dichter 1973, pp. 18–30.

⁷ Queen Eleanor of England fled from Nottingham Castle in 1257 because of fumes from the sea coal burned in the city of Nottingham, and London was suffering from the pollution caused by the burning of coal and limekilns. Regarding the destruction of forests, by the end of the thirteenth century the forests in France covered two million acres less than they would in the twentieth century. On these matters see Gimpel, 1976, pp. 76, 82.

well the decline in conditions and decrease in natural resources was proceeding apace as the coastal cities developed under Frankish rule. The scanty remains of native forests in the southern part of the kingdom, which were depleted during the Jewish War against the Romans in the first century CE, are referred to in accounts of the First Crusade when the lack of wood for building siege equipment was one of the factors that necessitated an extended siege of Jerusalem.⁸ The increasing need for fuel as well as other factors no doubt began to affect the forests in the Galilee and further north.⁹

Certainly as regards air and water pollution the conditions were in already quite bad in the larger coastal cities. Writing about Acre in the second half of the twelfth century the Greek pilgrim John Phocas had this to say about conditions in the city:

Here the air being corrupted by the enormous influx of strangers, various diseases arise and lead to frequent deaths among them, the consequence of which is evil smells and corruption of the air and the misfortune of the city is beyond repair.¹⁰

In addition, the streets would have been full of refuse, there being, so it would seem, no organised removal of waste. This job was largely left to individuals cleaning in front of their own properties and probably mainly to the rain in winter and to domestic animals, which would have caused as much filth as they removed. It does not appear that the *mathesep* (*muhtasib*), whom Prawer describes as the Viscount's "second in command", carried out his task as supervisor and regulator of the streets and public places or, if he did, that he took it very seriously.¹¹ According to Ibn Jubayr who visited the city in September-

⁸ J. France, *Victory in the East*, Cambridge, 1994, p. 336; WT 8.6.

⁹ One example of forest depletion was in cases where trees were cleared around defensive works in order to prevent the enemy's unobserved approach. Montfort Castle in the hills of the Western Galilee is perhaps a case in point. Recent evidence suggests the likelihood that the slopes around the castle were bare of trees in the thirteenth century whereas today they are densely afforested, apparently their natural state. Down the northern and southern slopes to the very bottom of the two valleys are enormous ashlar from the keep which had fallen there during the dismantling of the castle by Baybars in 1271. Had the slopes been forested at the time these stones would not have rolled all the way down the hill.

¹⁰ Joannes Phocas, p. 11.

¹¹ See Prawer, 1972, p. 147 and Scanlon, 1970, p. 183.

October 1184 “[Acre] stinks and is filthy, being full of refuse and excrement...”.¹² Tyre, he noted, was cleaner.¹³

Jacoby has called attention to references in contemporary sources to the “filthy sea” (“lordemer” in French) or “the sea called filthy” (“*a mari quod dicitur immundum*” in Latin), terms that appear in a number of documents, and he persuasively identified it with the area of the harbour, explaining that the pollution of the harbour was among other things, the result of its proximity to the royal slaughterhouse, butcher stalls and fish-market.¹⁴ It appears that the sewage from the Hospitaller compound was also emptying into the port; and quite probably sewage from private houses in the east of the city and perhaps from other public institutions would also have found its way into the harbour where it would have remained as the harbour was almost encircled by walls.

On the other hand conditions in Jerusalem and the smaller towns were much better. Ludolf of Suchem refers to Jerusalem’s “wholesome air”, albeit his description dates to a century after it had been reoccupied by the Muslims. Regarding other towns, Konstantinos Manasses, a twelfth century Byzantine traveller to the Holy Land, in his poem titled *Hodoiporikon* (Guidebook) after commenting on Acre’s deserved “doom and gloom” and later calling it a “suffocating town” where the dead are daily carried out of town “by heaps for burial”,¹⁵ records the “clean and fresh air” of Sebaste (Samaria) and its waters “transparent and healthy”. Nicosia in Cyprus was also renowned for its healthy atmosphere. In the words of Ludolf of Suchem:

¹² Ibn Jubayr, p. 318.

¹³ *Ibid.*, p. 319.

¹⁴ See D. Jacoby, “Three Notes on Crusader Acre (Lordemer and Ecology)”, *ZDPV* 109 (1993), pp. 88–91. References to *Ordamer* include *Cart. gén. Hosp.*, no. 1276; Desimoni, 1884, pp. 216–17; See Jacoby’s note 40 for the Latin reference in the Venetian Doge’s charter of 1261 and comments on the necessity to seal the window in the apse of the Church of St Demetrius to prevent the wind from projecting filth from the adjacent sea onto the altar.

¹⁵ See English translation of the poem in W.J. Aerts, “A Byzantine Traveller to One of the Crusader States”, in K. Ciggaar and H. Teule, *East and West in the Crusader States. Context-Contacts-Confrontations*, vol. 3, *Acta of the congress held at Hernen Castle in September 2000*, Leuven, Dudley, MA, 2003, pp. 179, 209. See also p. 217.

Also in Cyprus there is another exceedingly great city named Nicosia. This is the metropolis of Cyprus, and stands in the midst thereof in a plain at the foot of the mountains, and in an exceedingly healthy air. The king of Cyprus and all the bishops and prelates of the kingdom dwell in this city because of the healthiness of the air...¹⁶

¹⁶ Ludolf of Suchem, p. 42.

CHAPTER FOURTEEN

PROPERTY VALUES AND THE COST OF HOUSING IN THE LATIN EAST

Purchase and rental costs in the Latin East are recorded in a number of documents. While taking into account the likelihood of considerable fluctuations in the housing market, a situation to be expected considering the volatile conditions in the region, certain conclusions can be drawn on the basis of these documents and some comparisons made with housing costs in the Levant in general. We are aided in this by the considerable body of comparative documentary evidence for twelfth and thirteenth century Egypt and by documentation from the West. One problem in dealing with this subject is that the value and exchange rates of the different currencies in use in the centuries under discussion were unstable, fluctuating considerably within short periods. This can cause confusion and lead to varying interpretations and misinterpretations of the costs of properties and rates of rental. An accurate exchange rate between the Frankish bezant and the Egyptian and Syrian dinars on the one hand and between the bezant and the contemporary Western currencies on the other would greatly assist in interpreting the information found in the Frankish sources. Ideally we should like to have exchange rates for several different years within the two centuries under discussion. No such comparative data have been published and for the present we have to resort to the limited information at our disposal. Nonetheless we can present a rudimentary framework for this discussion based on published data from the Latin East, from the Islamic world as recorded in the Cairo *Geniza* and from the West (notably the commercial centres of southern Europe).

Currencies in Use in the Latin East

The coinage of the Latin East was based on the gold bezant, imitating until 1250 the Egyptian dinar of the Fatimid Caliph al-Amir (1101–30) and known in commercial documents as the *bizantii saraceni*.¹ The silver

¹ The counts of Tripoli also minted a gold bezant, but its design imitated the dinar of Caliph al-Mustansir (1036–94).

denier or carat (24 carats = 1 bezant) was minted from around 1140 and the Franks also minted a copper obole (half denier).² The Frankish imitation dinars were of a poor standard in comparison to the dinars of Egypt. The Frankish bezant contained at best 80% and occasionally as little as 56% gold and weighed c. 3.8 g.³ The Fatimid dinar by comparison was 90% pure and weighed in most cases between c. 4.1 and 4.3 g. From the late twelfth century it ceased to be of a standard weight but it remained more or less above its earlier weight and retained its degree of fineness.⁴ Until the second half of the thirteenth century the Egyptian dirhem was mostly of a poor silver alloy, only c. 27–32% silver.⁵ The rate of dirhems to a dinar fluctuated considerably, a dirhem of low silver content averaging about 40 to the dinar. The Syrian dinar was almost non-existent in the thirteenth century.⁶ The Syrian dirhem on the other hand was both plentiful and of a better alloy than its Egyptian counterpart, usually 80 to 90% pure silver.⁷ In Damascus in 1238–39 the Egyptian dinar was equal to nine Syrian dirhems.⁸

Value and Rate of Exchange of the Bezant of Acre in the Thirteenth Century

To be able to make something of the available data it is mandatory that we first have at least a basic understanding of the value of the money

² For a detailed discussion of the Frankish currency see D.M. Metcalf, *Coinage of the Crusades and the Latin East*, London, 1995. For other aspects of coinage in the Latin East see A.M. Stahl, "The Circulation of European Coinage in the Crusader States" in V. Goss (ed.), *The Meeting of Two Worlds: Cultural Exchange between East and West during the Period of the Crusades*, Kalamazoo, Mich., 1986, pp. 85–102; and the summary of Frankish coinage in R. Kool, "Currency and Coins in the Frankish East (1099–1291)", in Rozenberg, 1999, pp. 273–79. The term *bizantii saraceni* or *bizantii saracenati* found in documents referred to Islamic issues and those imitated by the Franks. The term "bezant" was a general term for gold coins. See A.A. Gordus and D.M. Metcalf, "Neutron Activation Analysis of Gold Coinage of the Crusader States", in D.M. Metcalf, ed., *Metallurgy in Numismatics I*, London, 1980, p. 119.

³ See Gordos and Metcalf, 1980, p. 121, p. 123 and n. 13. Possibly occasional "good-gold bezants" were minted which could have a percentage of gold as high as that of the Fatimid dinars, but these were exceptions.

⁴ R. Irwin, "The Supply of Money and the Direction of Trade in Thirteenth Century Syria", in *Coinage in the Latin East*, P.W. Edbury and D.M. Metcalf (eds.), *British Archaeological Reports International Series* 77, 1980, pp. 85–86.

⁵ *Ibid.*, p. 86.

⁶ *Ibid.*

⁷ *Ibid.*

⁸ Irwin, 1980, p. 87.

in use. One thing that can come to our aid is a comparison of house costs in the Crusader states with those of other countries in the region. For this we have the invaluable records of the *Geniza*. However, to understand them and for the purpose of comparison, it is desirable that we have some knowledge of the relative value of the Frankish bezant and the Fatimid dinar.

It is possible to trace the rate of exchange for the bezant in the West and the Latin East during the thirteenth century. Table 1 is based on data in P. Spufford's *Handbook of Medieval Exchange*. It presents examples of the exchange rate of the Frankish gold bezant during the thirteenth century in Genoa, Venice, Marseilles and the Latin East.⁹

Table 1: Rates of Exchange of the Frankish Bezant in Genoa, Marseilles, Venice and Outremer in the Thirteenth Century

Date	Rate of the Frankish Bezant	Place	Type of Reference
1210	6 soldi 8 denari of Genoa ¹⁰	Genoa	Used in accounting
1210	6 sous of Provence	Marseilles	Commercial context
1214	6s 8d of Genoa	Genoa	Manual exchange
1214	7s 7d of Genoa	Outremer	Used in accounting
1229	6 sous 7 deniers of Marseilles	Marseilles	Commercial context
1240	6s 7d " "	"	"
1242	5s " "	"	"
1244	5s 5d " "	"	"
1244	5s 2d " "	"	"
1248	c. 7s 5d (average taken from 27 rates)	"	"
1248	7 sous tournois	Acre	Manual exchange
1284	20 soldi of Venice	Venice	" "
1289	33s " "	"	Official rate
1291	12 soldi of Genoa	Genoa	Used in accounting

The information in Table 1 is not very precise. Spufford shows the considerable fluctuations in the value of the bezant in a single year (1248), when 27 different rates are given for Marseilles ranging between 4s 7d

⁹ P. Spufford, *Handbook of Medieval Exchange*, London, 1986, pp. 297–98.

¹⁰ The Genoese employed the monetary system used throughout Europe based on the lire (pound), which was not a coin but money of account. One lire equalled 20 soldi (in French, sous) or 240 denarii (in French, denier). The latter were silver pennies—12 to a soldi.

and 16s 2d, averaging c. 7s 5d.¹¹ Nevertheless it enables us to see that the rate of exchange for the bezant in the West during the thirteenth century was close to one quarter or one third of a lire.

In comparing the cost of Frankish houses with contemporary Egyptian houses it is important to keep in mind that the exchange rates between the Egyptian and Syrian dinars and the Frankish bezant were in constant flux. Our information is limited but we do have a few reference points. For example, in 1235 the Egyptian dinar was exchanged in Marseilles for 10 sous of Provence while just a few years later, in 1242, the Frankish bezant was exchanged in the same city for only 5 sous of Provence.¹² On the other hand a Syrian dinar in 1210 was exchanged in Genoa for between 4s 10d and 6s 8d of Genoa while the Frankish bezant in the same year in Genoa was also exchanged for 6s 8d.¹³ In other words, the Egyptian dinar in the first half of the thirteenth century (and close to the period for which we have the most detailed information regarding Frankish housing) was twice the value of the Frankish bezant whereas the Syrian dinar was more or less equal to it. As a rough guide, then, we can say that one Egyptian dinar was worth two bezants and in Genoa or Marseilles was roughly half a lire, and the bezant was worth about one quarter or one third of a lire. This gives us a yardstick; but we still need to get some idea regarding the purchasing power of the bezant which is, after all, the crux of the matter. Rather than merely presenting the cost of housing, it would be of greater value to gain some sort of understanding as to what purchase and rental prices actually meant for the Frankish population or for the Italian merchants in Crusader cities. Though very difficult to estimate, we can gain some idea by looking at a few examples of the cost of goods and services in neighbouring countries, as shown in Table 2.

It might also help if we could know what people earned in different walks of life. However, we have very little information on the levels of income earned in the Latin East. There are no published lists of wages and perhaps the best we can do is take a look at comparative examples in the West and East. The most relevant information available is from thirteenth century Genoa, which may be useful for comparison with prices in the Genoese communes of the Latin East. Table 3, based on data published by Stephen Epstein (1988), contains information relating to wage earners from various classes.

¹¹ Spufford, 1986, pp. 297–98.

¹² Spufford, 1986, pp. 297 and 307.

¹³ *Ibid.*, pp. 296, 297.

Table 2: Costs of Some Goods and Services in Medieval Egypt and Syria

Item	Cost	Approx equiv. In bezants	Source
Chicken	2 dirhems	1/10 bezant	Goitein, vol. 4, p. 230
Horse	17 dinars	34 bezants	Goitein, vol. 4, p. 263
Visit to public bath	1 dirhem	1/20 bezant	Goitein, vol. 4, p. 232
Garbage disposal from houses in Fustat	½–16 dirhems	1/40–4/5 bezant	Goitein, vol. 4, pp. 35–36, n. 175
Repairing a glass window in Cairo	1 dirhem	1/20 bezant	Goitein, vol. 2, p. 145
1lb of meat in Cairo c. 1230	1 dirhem	1/20 bezant	Goitein, vol. 4, p. 227
Barrel of wine (10 jars)	1 dinar	2 bezants	Goitein, vol. 4, pp.
	4 dirhems a jar	1/5 bezant	258–61
Average quantity of bread consumed daily by an individual	¾ dirhem	3/80 bezant	Goitein, vol. 4, p. 233
Loaf of bread (1259)	2 dirhems	1/10 bezant	Ashtor, 1978 (10), p. 24
Rice (in Aleppo, 1261)	20 dirhems per ratl ¹⁴	1 bezant	Ashtor, 1978 (10), p. 22
Honey (in Aleppo, 1261)	30 dirhems per ratl	1½ bezants	Ashtor, 1978 (10), p. 33

Table 3: Wages in Thirteenth Century Genoa¹⁵

Year	Wage Earner	Wage in Lire p.a.	Service/Form of payment
1236	Apprentice gold foil beater	L.11	per year for 5 years
1236	Apprentice spinner	L. 2.1 up to L.4.2	2d up to 4d per day + food & clothes, increasing yearly from 2–4 d over 4 years
1236	Apprentice spinner	L. 3.1 up to L.5.2	3d up to 5d per day, increasing yearly from 3–5 d over 4 years
1237	Bonaventura da Brescia,—servant	L.5	For one year service accompanying Bergamino da Bergamo on a voyage to Tunis
1248	Female domestic	7s	services per annum + food & clothes
1248	Apprentice to a woolmunger	36s 8d	per annum
1251	Apprentice to a woolmunger	7d up to 8d	Rising after the first year of two year term

¹⁴ A ratl was a weight roughly equivalent to 450 grams or one U.S.A. pound. See Goitein (1), p. 360.

¹⁵ Note that the annual wage in lire is approximate, computed by multiplying the daily wage by 250 days and dividing by 240. Epstein, 1988, p. 128 suggests 250 days as “a conservative estimate of the number of work days that allows for Sundays and a generous supply of festivals and holidays”; 240 is the number of denarii in a lire.

Table 3: (*cont.*)

Year	Wage Earner	Wage in Lire p.a.	Service/Form of payment
1252	17 year old servant	L.1 c. 2s	L.3 5s for three years service on land and sea including cooking per annum for six years
1256	Young apprentice to a gold foil beater	L.5	
1270s	Apprentice to a spinner	L.3.1 – L.5.2	3–5d per day
1272	Apprentice to a spinner	L.3.1 – L.5.2	3–5d per day, rising each year
1291	Worker in a rope-maker's shop	L.3 – 2s – c. 2.6d	L.9 6s 8d for three year term
n.d.	Blacksmith	L.15.6 – L.25	15–24d per day
n.d.	Male dyers	L.12.5	10s per 10 days
n.d.	Female dyers	10s	per annum
n.d.	Shoemaker	L.2.1 – L.6.2	2–6d per day
n.d.	Muleteer	L.3 18s	per annum
n.d.	Rock-breaker	L.6.2 – L.8.3	6–8d per day
n.d.	Wool carder	L.6.2	6d per day

From Table 3 we can see that wages in thirteenth century Genoa varied greatly depending on the type of employment, the qualifications (apprentice or skilled worker) and the age and gender of the worker; wages could vary between a mere 10s per annum (for a female dyer) and L.15.6–L.25 for a blacksmith.¹⁶

How does this compare to wages in Egypt? The *Geniza* is comparatively reticent on the matter of wages, and Goitein notes that wages and conditions of employment were not normally put down in writing.¹⁷ Nonetheless, there are sufficient examples to make a comparison possible.

¹⁶ For comparison, in London in 1212 carpenters received a daily wage of 4d (3d with food), masons and tilers received 1½d or 3d, plasterers 2d or 3d, their assistants 1½d or 2d, ditchers and workmen with barrows, 1½d or 2½d. See Salzman, 1952, p. 68 and the following pages for a detailed discussion. For a broad discussion on incomes and living standards in medieval England (thirteenth to early sixteenth centuries) see Dyer, 1989.

¹⁷ Goitein, 1967, p. 94.

Table 4: Wages in Medieval Egypt¹⁸

Year	Wage Earner	Wage in Dinars p.a.	Service/Form of Payment
1183	Labourer	40.6	6½ dirhems per day incl. lunch
1183	Labourer's helper	15.6	2½ dirhems per day
1183	Labourer's boy	12.5	2 dirhems per day
1183	Layer of floor tiles	31.2	5 dirhems per day
1183	Maker of mortar	31.2	5 dirhems per day
1199	Mason	39	6¼ dirhems per day incl. lunch
1199	Mason's helper	14	2¼ dirhems per day
1199	Water carrier	9.4	1½ dirhems per day
1199	Overseer	12.5	2 dirhems per day
1216	Carpenter	18.7	3 dirhems per day
1218	Judge	26	20 dirhems per week
1200	Mason	31.2	5 dirhems per day
c. 1200	Paver	22	3½ dirhems per day
1215	Mason	31.2	5 dirhems per day
1216	Street Cleaner	31.2	5 dirhems per day

The Egyptian dinar at this time was exchanged in Genoa at a rate that fluctuated between 6 soldi and 5 denarii (in 1156) and an exceptionally high 20 soldi (in 1268).¹⁹ But if we take a mean rate of c. 10 soldi, i.e. 1 dinar equals half a lire, then we can see that the wages in Table 4 range between the equivalent of c. L.4.7 and c. L.20.3. Most of the Genoese wages shown (see Table 3) are in the lower bracket but this is based on only a few examples of manual trades and should not be regarded as more than a very rough guide. Let us say then that people earning a low to middle income in Egypt and Genoa were receiving wages ranging between L.1 and L.25 per annum, the lower wages being for servants, female domestics, unskilled workers and apprentices.

As many of the houses in the communal quarters in Acre were rented to mariners, it would help if we had some data on their wages. Epstein notes a paucity of surviving contracts and suggests that ship captains probably in most cases made oral agreements with the mariners.²⁰

¹⁸ Ibid., pp. 95–96; Gil, 1976, pp. 512–16. Note that the annual wage in dinars is computed by multiplying the daily wage by 250 days and dividing by 40, i.e. 40 dirhems to a dinar. Despite the difference in religion, I have retained Epstein's conservative estimate of 250 workdays.

¹⁹ Spufford, 1986, pp. 306–307.

²⁰ Epstein, 1988, p. 121.

However he cites some examples, two from 1251 probably being fairly representative. One of these mariners received L.3 12s 6d and another, apparently for a voyage from Genoa to the Holy Land, received L.4.²¹

Taking the rate of one bezant being equal to one third of a lire in mid-thirteenth century Genoa, we can see that people in the low to middle range of income were earning annual wages equivalent to between 3 and 75 Frankish bezants, mariners around 10–12 bezants for a voyage. If we assume that the wages were similar in the Latin East, this gives us a very approximate gauge for comprehending the purchase and rental rates in the Latin East.

House Purchase

The documents of the *Geniza* give a very broad picture of purchase costs in Egypt. A house could cost as little as one dinar for a very simple village house (this must have been no more than a hovel) and as much as 660 dinars for a fine town house in Cairo or Fustat.²² Goitein divides houses in Cairo into five classes:

- a) Modest houses of the low-income population costing 20 to 40 dinars
- b) Better houses of the lower-class shopkeepers, schoolmasters and craftsmen costing around 60 dinars
- c) Houses of the middle class in these trades costing around 120 dinars
- d) Houses of physicians or merchants engaged in international trade costing 200–300 dinars or more²³
- e) Houses of the upper class worth 600 to 800 dinars²⁴

As is to be expected, houses in villages or less desirable regions were considerably cheaper. Ashtor suggests 6 to 8 dinars for a tenth to eleventh century village hut in the region of al-Fayyum.²⁵ The purchase cost of houses in Egypt, Syria and Asia Minor are shown in Table 5.

²¹ Ibid., pp. 122–23.

²² See Table 5.

²³ Similar prices are found in Qayrawān, Tunisia, Palermo, Sicily and Silifke. See Goitein, 1983, p. 86.

²⁴ Ibid., pp. 86–87.

²⁵ E. Ashtor, "Essai sur les prix et les salaires dans l'empire califien" *Rivista degli studi orientali* (1961), pp. 58–59.

Table 5: Some Examples of the Cost of Purchase of Houses in Egypt, Syria and Asia Minor²⁶

Site	Description	Source	Date	Price
Un-named village	House	Goitein, vol. 4, p. 86	—	1–5 dinars
Aden	House	Goitein, vol. 4, p. 276	1230	10 dinars
Cairo	Small house with 2 upper floors	" p. 56	1124	20 dinars
Fustat	Burnt house	" Appendix A, p. 278	1174	24 dinars
Aleppo	Small house	" p. 56	c. 1100	30 dinars
"	House	" Appendix A, p. 282	1241	72 dinars
Alexandria	House	" p. 96	1103	120 dinars
Unspecified	Garden house	" pp. 56–57	1233	160 dinars
Silifke	House	" Appendix A, p. 284	1137	200 dinars
Alexandria	House	" Appendix A, p. 285	1250	240 dinars
Cairo	Large house with 3 upper apartments	" p. 80	1285	c. 450 dinars
Fustat	House	" p. 96	1102	500 dinars
Cairo	House	" Appendix A, p. 288	1139	600 dinars
Jazira isle	House	" Appendix A, p. 288	1136	660 dinars

Regarding the Frankish states there are numerous documented references to house sales and purchase costs. For example, a house in Jerusalem was sold before 1125 by one Peter and his partner Geitfrid to George Rais and Bursard for 80 bezants.²⁷ In Tyre the house of Theodor of Sarepta was donated by him to the Teutonic Order in 1195, but the donation was challenged by his sons five years later and they settled with the Order for a payment of 200 bezants.²⁸ Table 6 gives a few examples of purchase costs in the Kingdom of Jerusalem and presents a picture of the considerable range in prices.

If we go by the suggested ratio of one Fatimid dinar being more or less equal to two Frankish bezants, we can make the following inferences regarding house purchase costs. In Egypt small houses could be sold for as little as the equivalent of 40 to 60 bezants (20 to 30 dinars) but more often houses cost the equivalent of over 100 to several hundred bezants and could rise as high as 1,320 bezants for an apparently

²⁶ For a much more expansive chart see Goitein, 1983, Appendix A.

²⁷ Bresc-Bautier, no. 95; *RRH*, no 110.

²⁸ Strehlke, nos. 31, 36; *RRH*, nos. 722, 774.

Table 6: Examples of the Purchase Cost of Houses in the Kingdom of Jerusalem

Site	Location	Descr.	Source	Date	Price
Jerusalem		House	Bresc-Bautier, no. 95; RRH, no 110.	1125	80 bezants
"		2 shops & 2 solars	Bresc-Bautier, no. 116	1155	170 bezants
"		House	Bresc-Bautier, no. 70	1135	200 bezants
"		Houses	Bresc-Bautier, no. 101	1135	440 bezants
Acre		"	" no. 42	1207	25 bezants
"		"	" no. 128	1250	175 bezants
"	... behind Palmanteriam	"	" no. 128	1250	280 bezants
"	near infirmary and curia	"	" no. 128	1250	350 bezants
"	In <i>Montmusard</i>	"	<i>Cart. gén. Hosp.</i> , nos. 3105, 3263	1264	474 bezants
"		"	" no. 128	1250	700 bezants 600 silver coins
"	Behind curia magistri	"	" no. 128	1250	1012 bezants
"	Str. of Provençals	Heritage	RRH, no. 1364	1269	1,700 bezants
"		House	Strehlke, no. 41	1206	2,700 bezants
Tyre		House	Strehlke, nos. 31, 36;	1195/	200 bezants
"		& garden	RRH, nos. 722, 774	1200	
"		House	RRH, no. 774	1200	200 bezants
"		& garden			
Tripoli		Shops	Delaville, no. 620	1182	113 bezants

well-located house on Jazīra Isle (an island on the Nile).²⁹ By comparison, houses in Frankish cities (in the representative examples presented in Table 6) the range is considerably greater, extending from between a remarkably low 25 bezants to a very high 2,700 bezants. Both of these extremes were for houses in Acre, which points to the considerable range in the quality and size of the houses available in that city.

²⁹ In a detailed appendix of house purchase prices in the Geniza documents Goitein gives 91 transactions dating between the tenth and thirteenth centuries. The range of prices varies between less than 20 to over 400 dinars. See Goitein 1983, Appendix A.

House Rental

With regard to rental costs it is once again worthwhile to begin by looking at examples from contemporary Egypt as recorded in the Cairo *Geniza* (see Table 7). Rental was a common arrangement in Fatimid, Ayyubid and Mamluk Egypt. The duration of a rental agreement in Egypt was occasionally two years but more usually one year, though it could also be six months.³⁰ This resembles rental agreements in the cities of Acre and Tyre, which were either for a year or for the period between the *passagia*, that is, six months. In Cyprus there are references to rental terms of only two or three months.³¹

In the *Geniza* rates for house rental remain remarkably steady throughout the eleventh, twelfth and thirteenth centuries, although occasional rises and attempts to raise rents are recorded.³² In general the ratio of the rental price p.a. to the purchase price of a house was 5 to 6 percent.³³ In the eleventh to thirteenth centuries, people in very modest circumstances could pay as little as 4 to 6 dirhems per month for their living quarters, approximately 60 dirhems per year, that is, c. 1.5 dinars, roughly the equivalent of three Frankish bezants.³⁴ Single poor tenants could pay a mere 2.5 dirhems per month in rent. The lower middle class paid 9–12 dirhems, that is, one-quarter or one-third of a dinar per month (3–4 dinars or c. 6–8 bezants p.a.). One half-dinar per month (six dinars p.a. or c. 12 bezants p.a.) was a reasonable rent for a middle-class house. Wealthy merchants would pay rent of one dinar or more per month (12 dinars or c. 24 bezants p.a.).³⁵ Naser-e Khusraw records rents of 5 to 11 dinars per month in Cairo, but rents this high are not reflected in the *Geniza* documents.³⁶

³⁰ Ibid., p. 95.

³¹ R. Pavoni, ed., *Atti rogati a Cipro da Lamberto di Sambuceto, Notai Genovesi in Oltremare in the series Collana Storica di Fonti e Studi*, 32, Genoa 1982, no. 51; *Collana Storica di Fonti e Studi*, 49, Genoa 1887, nos. 32, 165.

³² Goitein, 1983, p. 95.

³³ Ibid., p. 96.

³⁴ Ibid., p. 94.

³⁵ Ibid., p. 95.

³⁶ Ibid. For Goitein's detailed list of rents in communal buildings see vol. 1983, Appendix B.

Table 7: Some Examples of Shop and House Rentals in Egypt

Site	Description	Source	Date	Rental p.a.
Fustat	½ of a house	Goitein IV, pp. 87–8	1229	1 dinar 26 drs
Alexandria	½ of a house	"	p. 87 1103	3 dinars
"	House	"	p. 95 1165	4.5 dinars
Fustat	Shop in the market	"	p. 94 1143–44	4.5 dinars
Alexandria	Entire house with garden	"	p. 95 1132	5 dinars
Fustat	Small shop	"	p. 95	6 dinars
Fustat	Garden house	"	p. 95 1137	8 dinars
"	½ of a garden house	"	p. 95 1229	c. 8 dinars
Alexandria	Ground floor of a large house	"	p. 95 1194	12 dinars

Regarding rental costs in the Latin Kingdom, information for the twelfth century is fairly scanty but for the thirteenth century we are fortunate in the detailed information recorded in the already mentioned property lists of two of the Italian merchant communities—those of Venice and Genoa in Acre and Tyre.³⁷ Among the most informative sources for the thirteenth century, their value lies partly in that they provide a range of house types and prices all within the time frame of a single year (two years with some overlapping in the case of the Genoese lists). From these records we learn that the cost of renting a room or apartment in these towns could vary considerably depending on a number of factors: size and number of rooms, location in the town, location in the building (floor), time of year.

By comparison with Egypt, the cost of rental in the Italian communes in Acre was remarkably high. In the Venetian quarter (see Table 8) the annual rental for an apartment ranged between 7 and 180 bezants but averaged 53.9 bezants, more than twice the cost of the apartment (the ground floor of a large house) of a wealthy merchant in Egypt. If single rooms are included, an arrangement that was probably fairly commonplace in a community of itinerant merchants, the rate was somewhat lower, 47.4 bezants, still very high when compared with

³⁷ See above, p. 80.

Table 8: Rental of Houses and Apartments in the Venetian Quarter of Acre in the Thirteenth Century³⁸

Description	Source	Rental p.a.
Small house (<i>domus parva</i>) by bakery	Berggötz, 1991, p. 172	7 bezants
House (<i>domus</i>) by St. Demetrius	" p. 175	8 bezants
Apartment (<i>habitatio</i>) by St. Demetrius	" p. 176	8 bezants
" by stairs of Great Palace of Fondaco	" p. 177	9 bezants
House	" p. 172	10 bezants
Apartment	" p. 176	12 bezants
"	" p. 172	16 bezants
"	" p. 176	16 bezants
" in palace of <i>bailli</i>	" p. 172	18 bezants
" " "	" p. 172	18 bezants
" " "	" p. 172	18 bezants
" " "	" p. 172	18 bezants
"	" p. 172	18 bezants
"	" p. 177	22 bezants
"	" p. 178	22 bezants
"	" p. 178	24 bezants
" by St. Demetrius	" p. 176	30 bezants
"	" p. 178	36 bezants
House in solar of Great Palace of Fondaco	" p. 176	48 bezants*
" " " " "	" p. 176	60 bezants*
" " " " "	" p. 176	60 bezants*
" " " " "	" p. 176	60 bezants*
"	" p. 175	72 bezants*
"	" p. 175	72 bezants*
"	" p. 175	72 bezants*
"	" p. 175	72 bezants*
"	" p. 175	96 bezants*
" in solar of Great Palace of Fondaco	" p. 175	120 bezants*
House	" p. 173	144 bezants*
Tower house	" p. 175	156 bezants*
House in solar of Great Palace of Fondaco	" p. 175	168 bezants*
" " " " "	" p. 175	180 bezants*

the rates in Egypt. In the Genoese quarter (Table 9) rental rates were considerably higher, ranging between 6 and 254 bezants and averaging 82 bezants.³⁹

³⁸ Rent values marked with an asterisk appear in the list in a monthly rate and have been multiplied by 12.

³⁹ The Genoese lists are quite difficult to follow. Robert Kool who used this problematic source to attempt a reconstruction of the layout of the Genoese quarter in Acre, noted that there are in fact eight lists based on different calendar periods or types of property (see R. Kool, 1997, p. 187). The descriptions are quite laconic and the difficulty in interpreting the information these lists contain lies in the considerable

Table 9: Rental of Palaces and Houses in the Genoese Quarter during the Consulates of 1248–49 and 1249–50⁴⁰

Description of Properties	Rental p.a. 1248–49	Rental p.a. 1249–50
Vault next to pigsties facing Ordemer	6 bezants	
House next to Pisan <i>Carrubium</i> ⁴¹	8 bezants	
House in Ruga de Tribus Meagiis	10 bezants	
House before of the New Tower of the Pisans		10 bezants
House facing pigsties	12 bezants	12 bezants
House	12 bezants	
Storehouse in Old Tower	16 bezants*	16 b 12 k*
House		19 bezants
House by Ordamer and wall of Hospital	20 bezants*	32 bezants
Apautus		20 bezants
Vaulted house and shops in Old Palace		20 bezants
3 storerooms in Old Palace		23 bezants
House		26 bezants
House next to New Tower		28 bezants
Third Palace opposite Ordamer	36 bezants*	
House		37 b 18 k
House of Ademaris		80 bezants
Third Palace on Ruga Cooperta adjoining Griffon's Palace and shop		88 bezants*
Griffon's Palace with shop	42 b 24 k*	122 bezants*
House before the New Tower	60 bezants*	152 bezants*
House with shops and stalls	105 bezants	
Old Tower adjoining Church of St. Laurence	120 bezants*	140 bezants*
Second Palace in Ruga Cooperta	130 bezants*	40 bezants*
House of Johannis Volantis before the plaza	144 bezants	
Palace bordering on Griffon's Palace and shop		150b 24k*
Palace of the Loggia with one shop	180 bezants*	120 b 36 k*
Third Palace in Ruga Cooperta	200 bezants*	152 bezants*
Old Palace of the Commune	210 bezants*	250 bezants*
House next to house of Capelletis	254 bezants*	180 bezants*

overlapping with the same house referred to in more than one list, sometimes with a considerably different rental in spite of the fact that all the lists fall within the 1248–50 time-span.

⁴⁰ List based on Desimoni, pp. 217–19. Prices given for the *passagium* are marked with an asterisk and have been doubled to be equivalent to the price p.a.

⁴¹ On this name see above, p. 212. Kool, 1997, p. 191, notes that in this case the name *Carrubium* refers to the street which led to the Pisan quarter at a point where the road intersected with the Pisan and Templar quarters.

As opposed to a ratio of rental to purchase, which, as noted, was 5 to 6 percent p.a. in Egypt, in the Crusader cities it was often well above 10 percent. The low rents in Egypt were probably the outcome of the ready availability of living space, whereas it must have been quite difficult to obtain apartments in the crowded communities of Acre, especially when the merchants were wintering in the city after the autumn *passagium*. This fits in with what we already know from other sources on the crowding in Acre (and perhaps to a lesser extent in Tyre as well).⁴²

Of the two lists, more detail comes from that of the Venetian quarter. Rents were levied according to an annual or monthly rate, the latter being convenient for those merchants who wintered in the Levant and returned to Italy on the spring *passagium*. The Venetian list employs the term *domus* in two ways, meaning either an entire house or an apartment in a palace, for which it also used the term *habitatio*, whereas in the Genoese list the latter term is not used at all. On the other hand, in the Genoese list many of the more expensive rented properties were designated as palaces (*palacia*) while in the Venetian list that term was reserved solely for major communal buildings such as the *palace of the bailli* and the *Great Palace of the Fundaco*. The rental of a whole palace in the Genoese quarter for a mere 36 or 42.2 bezants shows that Prawer was correct in his comment that the Genoese appear to have used the term *palacium* rather differently from the Venetians, perhaps simply to refer to a three- or four-storey house.⁴³

On a smaller scale are single rooms (*camerae*) for rent. These range in price from 14 to 84 bezants but average 33.7 bezants p.a., the vast majority (12 of 20) are priced at 36 bezants (Table 10). Such single rooms would have sufficed for many of the smaller merchants as well as for people of other professions working in the communal quarters.

⁴² See above, pp. 215–16.

⁴³ Prawer, 1980, p. 239.

Table 10: Rental p.a. for Rooms in the Venetian Quarter of Acre⁴⁴

Description	Source	Rental p.a.
Room	Berggötz, 1991, p. 174	14 bezants
Small room in Great Palace of Fondaco	" p. 176	24 bezants*
Small room in " " "	" p. 176	24 bezants*
Small room in " " "	" p. 176	24 bezants*
Small room in " " "	" p. 176	24 bezants*
Small room in " " "	" p. 174	36 bezants
Room	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
"	" p. 175	36 bezants*
Large room in palace	" p. 176	60 bezants
" " "	" p. 176	60 bezants
Room in tower	" p. 177	84 bezants

Merchants rented not only houses, apartments and rooms but also storage space and shops as well as benches for the storage, display and selling of the goods they had brought from the West or purchased in Eastern markets during their period of residence in the region. Also available for rent were workshops for manufacturing goods and such installations as bakeries. Table 11 shows the rental costs for shops and benches in the Venetian quarter. Shop rents ranged between 20 and 184 bezants, benches between 4 and 41 bezants. In the Genoese quarter (Table 12) rents were between a low 21 bezants for two stalls and 23 bezants for three shops, up to 60 bezants for a bench, shop and storehouse, and a remarkable 366 bezants for a bakery (apparently a very lucrative business).⁴⁵ By comparison, rents for small shops in thirteenth century Egypt were only 4.5 to 6 dinars (see Table 7).⁴⁶

⁴⁴ The monthly rate is given here multiplied by 12 for the rate p.a.

⁴⁵ For a useful discussion comparing the possessions of the two communes see Kedar and Stern, 2006.

⁴⁶ Goitein, 1983, p. 295.

Table 11: Rental of Shops, Tables and Benches in the Venetian Quarter of Acre

Shops	Source	Rental p.a.
Shop	Berggötz 1991, p. 178	c. 20 bezants
"	" p. 172	24 bezants
"	" p. 172	25 bezants
Small Shop	" p. 179	30 bezants
"	" p. 179	30 bezants
"	" p. 174	34 bezants
"	" p. 174	35 bezants
"	" p. 174	c. 40 bezants
"	" p. 174	c. 40 bezants
"	" p. 174	c. 40 bezants
"	" p. 174	c. 40 bezants
Large shop	" p. 179	40 bezants
Shop	" p. 178	43 bezants
"	" p. 178	43 bezants
"	" p. 174	45 bezants
"	" p. 174	45 bezants
"	" p. 174	50 bezants
"	" p. 174	50 bezants
"	" p. 174	55 bezants
"	" p. 178	55 bezants
"	" p. 178	55 bezants
"	" p. 174	60 bezants
"	" p. 174	61 bezants
"	" p. 174	61 bezants
"	" p. 178	70 bezants
"	" p. 178	70 bezants
"	" p. 173	100 bezants
"	" p. 173	115 bezants
"	" p. 173	121 bezants
Bakery	" p. 172	150 bezants
Shop	" p. 173	154 bezants
"	" p. 173	160 bezants
"	" p. 173	180 bezants
"	" p. 173	180 bezants
"	" p. 173	180 bezants
"	" p. 173	180 bezants
"	" p. 173	184 bezants

Table 11: (*cont.*)

Tables and Benches	Source	Rental p.a.
Small bench	Berggötz, 1991, p. 179	4 bezants
" "	" p. 179	4 bezants
" "	" p. 179	8 bezants
Small bench	" p. 173	12 bezants
Tabula	" p. 172	13 bezants
Bench	" p. 173	18 bezants
"	" p. 173	25 bezants
"	" p. 173	25 bezants
"	" p. 173	25 bezants
"	" p. 173	25 bezants 18k
"	" p. 173	34 bezants
"	" p. 173	41 bezants

Table 12: Rental of Shops, Benches and Stalls in the Genoese Quarter in 1248–50⁴⁷

Description	Rental p.a. 1248–49	Rental p.a. 1249–50
Shop	18 bezants*	
Shop	20 bezants*	
Shop		20 bezants*
Two stalls		21 bezants
Shop	24 bezants*	32 bezants*
"	30 bezants*	40 bezants*
"		42 bezants*
"	58 bezants	30b 24k*
Old shop		40b 24k*
Shop		42b 24k*
3 shops (or third shop?)		23 bezants
Shop	40b 24k*	48 bezants*
	20 bezants*	
Shop		50 bezants
2 shops		50 bezants*
Shop with bench		57 bezants
Shop		58 bezants*
Bench, storehouse		60 bezants
Bench, shop, storehouse		60 bezants
Bakery		366 bezants

⁴⁷ List based on Desimoni, pp. 217–19. Prices given for the *passagium* are marked with an asterisk and have been doubled to be equivalent to the price p.a.

The term “shop” (*statio*) might not necessarily refer to anything very substantial; in some cases a shop was nothing more than a table or bench set in a niche in a wall. Indeed, the cheapest shops commanded a lower rent than some of the tables and benches, and this would have been because of their poor location or small size. If the small arched niches that can be seen in the Ruga Cooperta of the Genoese quarter were indeed used as shops then they may well have been rented for a small sum. The most expensive shops and benches were those located under or adjacent to the palace of the *bailli*. It is interesting to note that the shops and benches around the Palace of the Fondaco commanded a relatively lower rate. This might reflect the comparative regard of the Venetian commune towards these two institutions.

The purchase and rental costs of housing in the Kingdom of Jerusalem—or more accurately in the major port cities of the kingdom—were clearly high in comparison to Egypt. This reflects the rapid and continuous expansion of the urban population in the twelfth century and probably much of the thirteenth, and the overcrowding that was a by-product of the successful Italian mercantile activity that turned Acre into the most important port in the Eastern Mediterranean. With the movement of populations and institutions from other cities to Acre after the loss of the hinterland in 1187 and the recovery of the city in 1191 when it became the principal conurbation in the kingdom, this overcrowding continued. And it would have continued even in the second half of thirteenth century, in spite of the urban unrest in mid-century, by then primarily the result of the continuous contraction of Frankish territory from 1265 on, as the Mamluks steadily ate away at Frankish holdings, with Acre remaining as the final stronghold of the kingdom until it fell in May 1291.

CHAPTER FIFTEEN

CONCLUSIONS

The topic of housing is not as simple as it is sometimes thought to be. We generally think of a house as being a shelter from the elements, a comfortable setting for daily activities and also a means of displaying the status of its owner - his wealth and his position in society. For historians and archaeologists however, it is considerably more than that. It is an invaluable source of information relating to the cultural development of a society, embodying physical evidence of many of the elements of their heritage. Consequently different societies have different types of houses and the more dissimilar these societies the greater the differences in their houses.

To a considerable degree a house is shaped by its physical surroundings—climate, topography, type of building materials available. Another important influence on the design of a house is the profession and social status of its owner. An inclination towards the field of commerce, especially in the West, can influence the appearance of the façade. Elaborate façades were typical of the houses of wealthy merchants in the Middle Ages; but even in simple houses fronted by shops greater attention was given to the appearance of the façade than was usually the case in the East, where the exterior of a house told little of the activities or social standing of its owner. In merchant houses storage space was also prerequisite.

In rural societies, where people are involved in various agricultural activities, the design of their houses shows little or no regard for external displays of the owners' social standing but includes space for animals, storage and small-scale industrial activities. Another element affecting house design is the political climate of the region. People living in a politically unstable region will build fortress-like houses.

The manner in which the conditions in a region and the activities of a particular community can influence its domestic surroundings can be taken further. The innate character of a society—aggressive, commercially skilful, highly organized and artistically developed—will shape the surroundings it creates. The strength of the Roman Empire was very largely the outcome of its being a highly organized society

and one with the ability to absorb and improve on the ideas of others. These characteristics are reflected in its cities and houses. The Roman villa is of as regular and practical a design as is the Roman town, which itself evolved from the highly organized Roman army camps. In Arab society and in Islam, tribe and family are central elements. Privacy, particularly with regard to the female members of the household, has played a major role in shaping the Islamic house. This was combined with the need for protection from physically harsh surroundings. The Muslim house is cut off from the outside world by high walls and has few windows. The courtyard is an important element, protected from the hostile environment beyond. Unlike the West, in an Islamic town it is not always easy to distinguish the houses of the poor from those of the wealthy by their external appearance.

A typical house in the medieval West was different in most of its essential elements from the Islamic house. In cities and in rural areas it was generally constructed on an elongated plan and the façade was usually its most important architectural component—in that respect the counterpart of the Eastern courtyard. In medieval western society the town developed largely as a center of manufacturing activities and trade. Particularly in the twelfth and thirteenth centuries, towns came into existence or were revived as commerce and industry developed. These activities are reflected both in the layout of the towns—where the main street, as opposed to the twisting lanes typical of Islamic cities, was of primary importance—and in the houses, where the point of access to and from the street became the most important feature. In the typical Western town house the ground floor served as a work area, stable or shop, or as a combination of these. Through his front door the merchant received or sold his merchandise. If he was successful and wealthy he would display his wealth by building a large house with an elaborate façade.

In an Islamic town house many of the household's activities took place in the courtyard. The display of wealth was restricted to elaborate decorations and furnishings within the house: expensive rugs, carved panels, fine ceramics and other luxury items. Life in a village house also centered around the enclosed courtyard, with little if any display of wealth.

These are some of the principal differences in the domestic architecture of Eastern and Western societies. The aim of this study has been to see what changes occurred when a fragment of one of these societies uprooted itself and settled in the physical surroundings of

the other. One of the principal questions it has attempted to deal with is, to what extent was the house of a Frankish settler influenced by his new surroundings and to what extent did it carry on European traditions? It is clear that in the Frankish East a complete evolution of domestic architecture did not take place, in that a distinctive type of house unique to the Kingdom of Jerusalem and the neighbouring Frankish states did not appear. It would be surprising indeed if such a development had taken place, the duration of Frankish settlement being too short and the traditions, both local and those the Frankish settlers brought with them, too deep-rooted. This is not to say that there is nothing to distinguish the Frankish houses of the East from local houses or from houses in the West. What in many cases did take place in the towns and villages of the Frankish East was the first stage of such an evolution—the application, if not quite a synthesis, of both Eastern and Western house designs and building techniques. To this were added some new, original developments, although of the latter there is comparatively little evidence. What we have for the most part are various imports and local adaptations often existing side by side in a single building. Thus, for example, in an urban house in the Genoese quarter of Acre we come across the Eastern “courtyard-house” layout together with the use of Western construction techniques such as diagonal tooling and masons’ marks, Eastern type interlocking joggled voussoirs in an arched window and a wall chimney that was possibly an adaptation from the regions under Byzantine rule.

The introduction of unfamiliar building techniques, house designs and innovations is not exceptional to the Near East, although the extent and diversity of the phenomenon as it occurred in the Crusader period has few equivalents. Nor was this process of introduction, adaptation and assimilation unique to domestic buildings. Indeed it is best seen in what for very practical reasons became one of the principal areas, perhaps the most prominent area of achievement of the Franks in the East—military architecture. There, necessity imposed originality and speeded up a process that was not dissimilar to what was happening with domestic architecture, so that within a few decades the Franks had developed what can be regarded as something entirely their own—the “Crusader castle”—epitomised in the unique and remarkable examples of Belvoir Castle (albeit a design that became obsolete almost as soon as it was built) and Crac des Chevaliers.

One important aspect of the study of daily life and the domestic setting in the Latin East is the considerable degree to which it illuminates the frequently discussed issue of “Orientalization”, that is, the adoption and absorption by Frankish settlers of different aspects of the surrounding traditions of the region. “Orientalization” has been observed in the fields of administration, finance, medicine, warfare, social welfare, the fine arts and minor arts—wherever the influence of the more advanced Islamic society came to play upon that of the Occidental settlers. The ability of the newcomers to adopt, absorb and develop these influences must be seen as one of the more exceptional aspects of the Crusader experience. The broad use of the Eastern courtyard-house design in domestic buildings of all types is one aspect of this phenomenon, the use by the Franks of Eastern ceramics and other items is another. The courtyard house with its particular elements—notably the almost windowless exterior and access via an indirect passageway from the street into an internal courtyard from which the rooms and apartments of the house were entered—was developed by Muslim society in the half-millennium prior to the arrival of the Franks. It was ideally suited to the region, its climate and Muslim social requirements. That the Frankish settlers adopted it in many of their own houses stemmed not so much from social needs—such as the need for privacy in the Muslim household—but rather from the simple fact that the Franks often occupied existing houses and probably grew used to them, appreciating the benefits of this design and the protection it provided from the harsh summer and winter conditions.

Western-type house plans are as prominent as Eastern plans in the Frankish urban and rural houses, in the latter perhaps even more prominent. These include the Italian-type merchant palaces and tower houses, houses on elongated burgage plots, the rural first-floor hall houses and planned street-villages with their houses built on elongated tofts. Merchant palaces, well-known in the maritime cities of Italy, underwent certain fundamental changes when built by the Venetian, Genoese and Pisan merchants in their communal quarters in Acre and Tyre. These changes had something to do with the available materials and the Eastern methods of construction that the Franks had adopted and that were more appropriate to a region largely lacking in wood for construction. They also developed out of considerably different functional requirements. As noted, in the East the so-called “merchant’s palace” was in fact nothing more than a large apartment building used

by many itinerant merchants during their half-yearly sojourn between the *passagia*.

Tower houses were another Italian introduction in the port cities, but of this phenomenon we have too little information from historical sources and archaeology to allow any substantial conclusions to be drawn with regard to how this type of building, so prominent in contemporary Italian cities, was adopted and modified to the conditions of the Frankish East.

Of the other type of urban houses introduced by the Franks—houses built on elongated burgage plots—there does not seem to be much change from its Western prototype other than that in the East such houses were invariably constructed of stone. This is also where the elongated rural house of the planned villages in the region of Jerusalem differs from its Western counterpart. Whereas the latter was generally constructed of wood and other perishable materials, the houses in these villages were always solidly constructed, with thick stone walls and massive barrel vaults, and occupied the entire house plot or toft. First-floor hall houses were introduced by the Franks in the first half of the twelfth century to supplement and replace tower keeps as a means of controlling the countryside, regulating agricultural activities and collecting taxes. These often became the nuclei for larger courtyard houses (rural estate centres) which, with their considerably increased storage space and enclosed courtyards, were more suited to their purpose.

Under Frankish rule the two architectural styles that had been predominant in medieval Europe since the beginning of the second millennium—the Romanesque style, followed from the middle of the twelfth century by the Gothic style—were employed in domestic buildings. However, in comparison to ecclesiastical buildings these styles, which consist of and are defined by both structural and decorative elements, are very poorly represented. This is mainly because domestic building, which is so largely utilitarian in nature, is less required to make an impression than to fulfil fairly simple needs. It is not surprising that in Western merchant houses—such as those found in the streets of Cluny, France, or the merchant palaces that became so very prominent in medieval and post-medieval Venice and in some of the merchant cities of northern Europe—architectural decoration was largely concentrated on the façades, which were intended to display to the public the owner's wealth and status. This might explain why there is so little

evidence of the decorative aspects of these architectural styles in the remains of Frankish houses in the East. With a handful of exceptions in Cyprus, the façades of Frankish houses have hardly survived at all, and in no single case on the mainland have they survived to the first floor, where most decoration is usually found.

Eastern decorative elements such as *ablaq* and joggled and stepped voussoirs are represented in a few Frankish houses. These techniques were in use at the time, but they became prominent mainly in the Mamluk period. On the whole there is little that can be identified as Muslim decoration in the Frankish houses.

The particular construction technologies employed by the Franks, including the construction of vaults and the methods of finishing ash-lars, were hallmarks of Western architectural technology and were European introductions to the Near East. The most notable of these are the diagonal tooling used to finish the surface of ash-lars and the presence of masons' marks.

To what extent, if at all, did the changes introduced by the Franks influence on the local architecture that developed in the region after the Crusader period? It would seem that in this as in many other fields the long-term influence of two centuries of Frankish rule was negligible. There is little noticeable influence of Frankish domestic architecture on the development of the local Palestinian house (with the possible exception of the use of double windows).¹ The techniques and designs introduced by the Franks in the twelfth and thirteenth centuries had by the fourteenth century vanished almost without a trace. The stone-dressing techniques brought from Europe were not carried into Mamluk architecture. The types of houses changed, not surprisingly, with the destruction of the coastal cities; Italian-influenced house designs vanished, and with the departure of the Frankish landowners manor houses became obsolete. The burgage-plot layout in towns and villages together with the linear plan street village disappeared, the latter to return only with the German Templar settlements and the Zionist villages in the late nineteenth and twentieth centuries. Certain installations used by the Franks vanished entirely: the stone-built bread oven was replaced by the clay *tabun*, and the fireplace and wall chimney were not to be seen again in the domestic architecture of the region until fairly late in the Ottoman period. Where, on the other

¹ See above, p. 58.

hand, the Franks had adopted Eastern traditions these continued on after they had departed from the scene.

As I have suggested here, the presence of both Eastern and Western elements of design and technology in Frankish domestic architecture was the outcome of a slow process of synthesis that probably began soon after the arrival of the Franks and continued throughout the period of their presence in the East, had they survived longer in the region it would probably have led to the development of a unique and distinctly Frankish type of house, just as had already occurred in the realm of Frankish military architecture. In attempting to follow this incomplete evolution it would be of interest to know if it was a linear process, that is, did the Franks begin by occupying Eastern houses and themselves begin to build similar houses, only subsequently introducing Western designs as the need arose or with subsequent influxes of Western settlers? Or, alternatively, did they begin by trying to introduce Western domestic architecture of the type they knew from home but over time come to appreciate the qualities of the Eastern house? In short, can we identify a particular stage in the development of the Frankish house when Eastern traditions were dominant and another when those of the West played a greater role? Ultimately, it would seem, the answer is negative and that the choice of design depended rather on the kind of settlement under consideration. Whenever a new community was set up specifically as a Frankish settlement, we find that Western influences were predominant. Thus in Frankish villages, plans and building techniques are Western and these settlements differ from those in Europe only to the extent that local conditions, such as the climate and the lack of wood for building, dictate. The same is true of farms and estate centres. If we take, for example, the simple farmhouse excavated at Har Hozevim in 1993–94 or the courtyard estate centres at Aqua Bella, ar-Ram and Jifna, we have buildings of a type that has no counterpart in the medieval East. In the West however, we find manor houses and farms which to the extent that they differ from those of the Kingdom of Jerusalem do so only in the materials used for their construction. On the other hand, most of the houses in Caesarea and many of the houses of Frankish Acre are decidedly Eastern in layout. It would appear then that we can distinguish between urban and rural sites, identifying extensive Eastern influences in the cities (tempered considerably in Acre and Tyre by the presence of Italian merchant houses) and Western influences more or less exclusively in villages and in the manor houses and farms. This trend can perhaps be

partly explained by the possible employment of local Muslim builders in the towns (Muslim masons and labourers were both skilled and cheap, particularly in the case of slaves),² whereas in rural areas, in particular in the Frankish villages, construction was probably carried out by the Frankish settlers themselves.

We are only at the outset of research in this field. Recent discoveries have made apparent the degree to which this period has been neglected in the past. Eight hundred years after the collapse of the Crusader states, the majestic ruins of fortresses and churches are a powerful reminder of the military and ecclesiastical aspects of the Frankish presence. In their shadow we have tended to overlook presence of the simple settler, the merchant and the farmer.

² Paul Crawford, trans., *The Templar of Tyre. Part III of The 'Deeds of the Cypriots'*, Aldershot, 2003, p. 40, notes that in 1263, Sultan Baybars offered the Franks an exchange of Christian slaves held by him for Muslim slaves, but the Templars and Hospitallers rejected the offer because they too highly valued their Muslim slaves, many of whom were skilled craftsmen, possibly including masons.

APPENDIX ONE

A TYPOLOGY OF FRANKISH HOUSES IN THE LATIN EAST

One of the most decisive factors influencing the form of the house is the locality in which it is found; coastal or inland, level or mountainous, rocky or wooded. Even more consequential is whether it is in an urban or rural setting. I have divided this typology into three parts: town houses, village houses, and manor houses and farms.

Town Houses

In the towns of the Frankish East there appear to have existed at least six distinct types of houses: courtyard houses, palaces, tower houses, merchant houses, houses on burgage plots and hovels. The division of these houses into Eastern and Western types includes among the Eastern types the courtyard houses and among the Western types the palaces, tower houses and houses on burgage plots. Merchant houses and hovels can fall into either category. In Caesarea we find courtyard houses (houses 3:1–2)¹ and one building (house 3:7) of decidedly Western design that has been interpreted by Pringle as a merchant house.² In Caymont we have Eastern type courtyard houses (houses 4:1, 4:2) as we do in the *faubourg* of Chastiau Pelerin (house 5:1). In Jerusalem in the restored Cardo there is a Western type town house with shops on the ground floor (house 8:2). On the Ophel there is an Eastern plan courtyard house (house 8:1) with Western diagonally tooled masonry. Several of the houses in Acre combine both Eastern plans and Western features (notably houses 1:8 and 1:20—both of

¹ Although the courtyard house is typical of Eastern domestic architecture it is also a type that appears in the West—particularly in Italy but elsewhere as well. Therefore the use of the courtyard plan by the Franks may in some cases be a continuation of Western traditions rather than the influence of the domestic architecture that the Franks encountered in the East. Only where it is combined with additional elements that are typical of Eastern architecture but not usually found in the West can we say with certainty that a house is an Eastern type courtyard house.

² Pringle, 1993, pp. 182–83.

which are Eastern type courtyard houses with such Western features such as embrasure windows, masons' marks and chimneys). House 1:8 is perhaps the best example of a house that combines both Eastern and Western planning. It is a complex consisting of a central courtyard entered via a narrow passageway that takes a right-angle turn before entering the courtyard—a classic example of Eastern house design. On the other hand, the main element of this complex is a large hall constructed of six connected groin-vaulted bays probably forming the ground floor warehouse of a large palace or apartment building, a type of house not uncommon in Italy, where underground cellars and occasionally ground floors were built in this manner to serve as warehouses above which rose the merchants' living quarters. This hybrid may point to the beginning of a trend in the thirteenth century to combine distinctly Eastern and Western types.

A. Courtyard Houses

From the buildings examined it is possible to identify at least 23 town houses with courtyards (houses 1:2, 1:3, 1:4, 1:6, 1:7, 1:8, 1:9, 1:11, 1:16, 1:17, 1:20, 1:21, 1:22, 1:23, 1:24, 2:1, 2:2, 3:1, 3:2, 4:1, 4:2, 5:1, 8:1). These include a variety of buildings with three prominent sub-types:

Type 1: A large rectangular complex with an entrance passage from the road into the courtyard, from which the surrounding apartments are entered (houses 1:6, 1:7, 1:24). These were probably occupied by several families or rented out by the commune to seasonal merchants. Because of their size Kesten has called them mansions.³

Type 2: A smaller, single-hearth dwelling with a centrally located courtyard (house 1:8). Entrance to these houses was often via a covered passageway from the street into the courtyard and from there into the rooms of the house.

Type 3: A single-hearth dwelling with an attached, walled courtyard (houses 1:4, 1:11, 1:21, 1:22, 2:1, 3:1–2, 4:1–2, 5:2 8:1). Some of these houses differ from type 2 in the irregularity of their plan, which possibly is a factor of their being located in less densely populated areas.

³ See above, pp. 8, 16.

House 8:1 for example was on the Ophel hill at the south-eastern edge of Jerusalem, outside the walls—not a densely populated area. We can perhaps infer from this that the house with an attached courtyard is a type characteristic of areas where the value of property is not very high. It is by its nature of a less compact design and thus less suited to a large town like Acre, where space was lacking and property values were high although examples are found there as well as in the smaller towns. As in Jerusalem, in the smaller towns such as Arsur, Caesarea and Caymont, most of these houses have been found on the outskirts against the city walls. Occasionally this type of house had a ground-floor shop.⁴ Some houses had more than one courtyard. In Tyre a Turcopole named Belmene lived in a house consisting of two vaulted rooms with two courtyards.⁵ This recalls the house with two courtyards in Caymont—Area E (house 4:2).⁶ The courtyard was occasionally paved with stone (houses 4:2), sometimes with compacted plaster (house 4:1) or pebbles. There was often a cistern in the courtyard (houses 1:23, 3:2) whereas in houses without courtyards it would be constructed under the house itself. Although there is at present only one example, the arrangement found at Caymont (house 4:2) with the latrine constructed in the courtyard in a position some distance from the house door, may have been typical. There is also little evidence for cooking facilities; but perhaps these too were often located in the courtyard. The house in the north of the *faubourg* at Chastiau Pelerin (house 5:2) had an oven in its courtyard.⁷ In the larger towns courtyard houses were almost always of more than one storey. Access to the upper storeys and the roof was via stairs, which in some cases appear to have been located in the courtyard but elsewhere were probably outside the house, on the street (house 1:20).

The courtyard house was the most common type, with at least 23 of the 56 urban houses discussed here falling into this category.⁸

⁴ See Berggötz, 1991, p. 145.

⁵ Ibid., p. 148.

⁶ See below, p. 305.

⁷ See below, p. 308.

⁸ I refer here only to those houses which have clearly identifiable plans. Some among the houses included in the following appendix are only partially preserved and others do not fall clearly into any one category.

B. *Palaces/Apartment Houses*

A number of massively constructed halls formed by connected, groin-vaulted bays supported by huge piers have survived in Acre. Houses 1:1, 1:5, 1:10, 1:15, 1:17 and 1:25 are examples of these. One of these buildings, house 1:5, has three arched entrances from the narrow covered street on to which it abuts that appear to have been shop entrances. The size, strength and quality of construction of these buildings rule out the possibility that they were privately owned dwellings. House 1:5 measures 382.5 square m. and the six piers that support the vaults are over 1 square m. in section. The height is approximately 6 to 7 m. Their massive construction points to the likelihood that these buildings rose several stories above this level.

We might have been left to ponder over the function of these buildings were it not that, fragmentary as they are, they are clearly the same buildings we find described in some detail in the thirteenth century list of Venetian and Genoese possessions in Acre; the multi-storey buildings known as *palacia*.⁹ They had shops, apartments and sometimes warehouses on their ground floors, and apartments and small rooms on the upper floors that were sold or rented out to visiting merchants, so that the term *palacium* apparently refers to a large apartment building. These buildings occasionally had additional elements; defensive towers¹⁰ shops, a loggia, an external staircase. Some had connecting courtyards sometimes containing a cistern. Some, possibly many of these palaces had tables or benches for displaying merchandise.¹¹ In discussing the Venetian Quarter, Marliglio Zorzi mentions the Great Palace of the Fondaco which had sixteen shops and twelve small rooms on its ground and basement floors.¹² On the second floor were eleven rooms and on the third, eight small rooms and two large ones. Four of the small, low-rental rooms may have lacked windows, and there may have been additional internal divisions.¹³ Rising from the second floor were defensive towers.¹⁴ Like others in Acre, the building was apparently leaning, in the fashion of medieval houses in Europe.¹⁵ It had

⁹ Berggötz, 1991, pp. 172–78.

¹⁰ Prawer, 1980, p. 234.

¹¹ Berggötz, 1991, p. 173.

¹² Ibid., pp. 174–76; Prawer, 1980, p. 233.

¹³ Prawer, 1980, p. 234.

¹⁴ Ibid.

¹⁵ Ibid., p. 235.

an outside staircase to the upper floor.¹⁶ In the north of the Venetian quarter stood the palace of the *bailli*. This was a two- or three-storey building with six large shops on the ground floor. Outside it had a portico or loggia, and there were eight benches or tables for displaying merchandise (*tabule sive banci*).¹⁷ These were the two principal palaces in the Venetian quarter, but there were several other, smaller ones. There was a four-storey house whose ground floor served as a stable.¹⁸ There was a two-storey building with eleven rooms.¹⁹ A huge building some four storeys high with ten rooms or apartments apparently used the Great Palace of the Fondaco's staircase.²⁰ There were probably both storerooms and apartments on the ground-floor level of this house. These included rooms belonging to the commune, used to store stones, chalk and timber, and a room held by the *placearius*.²¹ There were also two houses, both of three storeys; one had two shops on the ground floor, two rooms on the first floor and one room on the second floor; the other had one shop and two rooms on the ground floor and one room each on the second and third floors.²² Zorzi mentions houses whose lower floors were taken up by shops (*bothegae* or *stationes*) and with stalls (*banci*) leaning against the walls, the upper floors serving as living quarters and magazines of the merchants and craftsmen.²³

Regarding the Genoese quarter, several palaces are referred to in the inventory of Genoese possessions drawn up in 1249 by the Genoese *consuls*, Guilielmo de Bulgaro and Simone Malocello.²⁴ This source does not provide any details regarding the rooms or number of storeys of the palaces; it only gives certain hints relating to their location and occasionally to occupants. For example, there were three palaces on the Ruga Cooperta and near one of them lived soap-makers.²⁵

¹⁶ It is worth noting that the buildings described below in no instance have an internal staircase.

¹⁷ Berggötz, 1991, p. 173; Prawer, 1980, p. 233.

¹⁸ Berggötz, 1991, p. 176.

¹⁹ Prawer, 1980, p. 235; Berggötz, 1991, p. 177.

²⁰ Prawer, *Ibid.*, n. 56; Berggötz, *Ibid.*

²¹ *placearius* = *platearius*—toll gatherer. Niermeyer and Van de Kieft, vol. 2, p. 806.

²² Prawer, 1980, p. 236.

²³ Berggötz, 1991, pp. 174–76.

²⁴ Prawer suggests that the Genoese perhaps used the term somewhat more loosely, which would explain the larger number of palaces in their quarter. *Ibid.*, p. 239. For a comparison of holdings of the two communes see the discussion in Kedar and Stern, 2006.

²⁵ AOL ii, 217: "*Palacium tertium Ruae Coopertae iuxta domus Thomae et Jacobi quondam Saboneriorum.*"

How appropriate is the term “palace” (*palacium*) when applied to the archaeological remains? It clearly denotes a more elaborate and valuable type of building. Prawer, noting the possibly subjective use of this term in the documents, suggests that it may have been used to describe three- or four-storey houses.²⁶ Most of them could perhaps be better described as apartment buildings.

As the Mamluk destruction of Acre apparently concentrated on knocking down the upper storeys of such houses and leaving the rubble covering the lower storeys, the only archaeological evidence for their existence is the remains of the ground floor halls. But, as noted, these were so massively constructed that they clearly were intended to support superstructures several storeys high and the large open halls that survive in Acre were very likely the ground-floor warehouses and shops described by Marsiglio Zorzi. Such buildings are known in Italy, where the ground floor or an underground basement was constructed exactly in this manner to serve as a warehouse. Unlike the buildings in Acre, the upper storeys in Europe were often constructed of wood. A typical example of this type of vaulted building can be seen in a twelfth century house in Angers, France.²⁷

C. Tower Houses

In Acre remains are evident of only two towers, one in the northern part of the Genoese quarter (Figure 64), the other attached to a house with a loggia in the south of the city.²⁸ Sources record a tower in the Venetian quarter three storeys high with rooms leased out on its second and third floors and a vault used as a prison below,²⁹ as well as two towers in the Genoese quarter: the “Old Tower” and the “New Tower”.³⁰ Occasionally such towers would have contained prisons. In 1198 King Amaury gave a “*turris carceris*” to one William of Petra.³¹ That these towers also served a domestic purpose we know from the reference to rooms on the upper floors of the above-mentioned tower

²⁶ Prawer, 1980, p. 239.

²⁷ Similarly constructed buildings with huge groin-vaulted ground floor storage were found outside of Italy. See for example in G. Duby, ed., *Histoire de la France urbaine*, vol. 2, *La ville médiévale*, Paris, 1980, p. 243.

²⁸ Neither if these could be observed within at the time of our survey.

²⁹ Berggötz, 1991, p. 177; Prawer, 1980, p. 235. Prawer identifies this as being the tower appearing on the medieval maps of Acre, n. 58.

³⁰ Desimoni, 1884, pp. 215ff.

³¹ *RRH*, no. 746.



Figure 64. Tower house in Genoese quarter, Acre (photograph by author).

in the Venetian quarter that were rented out.³² Towers other than those incorporated in the city walls frequently appear in descriptions and would seem to have been a more typical part of the architecture of Acre than can be observed today, although perhaps not to be found at every street corner as Ludolf of Suchem suggests.³³ They may have been similar to towers in Italy such as that in the via delle Terme in Florence, with brackets for supporting movable (wooden), defensive platforms.³⁴

D. Merchant Houses with Ground-Floor Shops

House 3:7 in Caesarea has been interpreted as being a merchant house with a ground-floor shop.³⁵ Houses 8:2–3 and 8:7 in Jerusalem, situated on a central market streets were also merchant houses, and this type of house was probably quite common in all of the larger Frankish towns. They are also well represented in written sources. In the Venetian quarter of Acre a two-storey house with two shops on the ground floor was recorded by Marsiglio Zorzi.³⁵⁵ A three-storey house had two shops on the ground floor, two rooms on the first floor and one on the second.³⁶ Another three-storey house had one shop and two rooms on the ground floor and one each on the second and third floors.³⁷

E. Houses Built on Burgage Plots

Houses of the burgage-plot type are occasionally found in Frankish towns. Houses in the north-western quarter of Acre, which Kesten referred to as the “Rectangular Quarter”,³⁸ have narrow plots. Houses 1:2 and 1:3 are examples of this plan.

F.hovels

One type of house that for obvious reasons has not survived but for which there is written evidence is the simple hovel. In crowded medi-

³² Prawer, 1980, p. 235.

³³ Ludolf of Suchem, 1895, p. 51. “At every street corner there stood an exceedingly strong tower, fenced with an iron door and iron chains.”

³⁴ Illustration in C. de La Roncière, in DUBY, 1988, p. 189.

³⁵ See Pringle, 1993, pp. 182–83.

³⁶ Ibid., p. 390.

³⁷ Ibid.

³⁸ Kesten, 1962, pp. 18–19.

eval cities simple lean-tos may have been quite common although there is not only no archaeological evidence for them but also almost no written reference. However, William of Tyre does mention the existence of reed houses in Acre in the early twelfth century.³⁹

Village Houses

In Frankish villages house typology is much less complicated—or, rather, to the extent that we know about them, Frankish village houses are less complicated. The fact is that we have several good examples of Frankish village houses from street villages in the vicinity of Jerusalem, and virtually nothing else. There are no published reports on houses from unplanned Frankish villages such as Castellum Regis, and these would clearly have been of quite a different layout. We can only deal with what is available—the houses of the street villages at Magna Mahumaria, Parva Mahumaria, al-Kurum and al-Haramiya. As we have seen, these houses were decidedly European in most aspects. They lined either side of a single street, with long narrow fields stretching out behind them with rubble terrace walls. The uniformity in these villages stems from their pre-planning. The houses occasionally vary in size but a larger house is little more than a combination of two or three smaller ones. Using the information from these four sites we can draw a fairly detailed picture of their appearance.

A typical house was an elongated, barrel-vaulted structure with its short side facing the street. The average size of these houses was 4–6 by 10–12 m. They were constructed in groups, as a single building project, sharing a single front or back wall running the length of two or three houses, every house sharing its massive side walls with the houses on either side of it. These side walls averaged 80 cm. to 1.5 m. in width, massively built to support the barrel vaults and constructed of local, hard limestone fieldstones and chips with rubble and mud-mortar fill. They had ashlar doorposts, doorsteps, door and window frames; but otherwise most of the construction is of a rustic nature. The ground floor of each house was roofed with a slightly pointed barrel vault. The floor was levelled bedrock, occasionally plastered. Interior and possibly exterior walls were also covered with a plaster surface. The ground

³⁹ See above, p. 42 n. 16.

floor was used for household industries and possibly sometimes for livestock and/or storage. Wine and oil presses and vats as well as ovens were usually near the door. The ground floor may occasionally have served as a shop. Doors were double-leafed. Windows were small and few of them survive. Often the ground floor appears to have had none at all; light would have entered only via the door. Some houses had, in addition to the front door, a back door leading to a walled-in yard.

Probably most of these houses were two storeys high, some with vaulted undercrofts. The latter were most likely used for storage, as little light entered them. In at least one case however the undercroft was entered via an external staircase in the street and light entered through a large arched doorway. In this case there was also a second internal staircase from the ground floor. This undercroft would have been used for storage. Some houses had fireplaces with wall chimneys built into their northern walls. There were stone benches built around the walls, and cupboards and niches in the walls. A partition wall often separated a smaller room at the back that served as a kitchen and perhaps as a latrine as well. At Magna Mahumaria we have evidence of a second floor which was also subdivided by partition walls. There is little evidence for latrines; probably chamber pots, which are occasionally found in medieval ceramic assemblages, were used. The upper floor was reached either by stairs outside the house on the street front or by a ladder. This floor was subdivided by walls into two or three small rooms where the family slept. It is not clear whether the upper floor was barrel-vaulted. There is little evidence for roofing, but the scarcity of roof-tiles suggests that roofs were generally flat. Water was collected on the roofs and was conducted via storm-water channels and pipes to the cisterns cut into the bedrock floors or in the field behind the house. Un-plastered cistern-like cavities found in some houses were perhaps used for storing cheese or wine. Behind the house the plot extended out for some distance. The plots were separated from one another by terrace walls constructed of fieldstones without any mortar.

Rural Estate Centres and Farms

In Europe the manor house of the twelfth and thirteenth centuries was generally either a first floor hall-house⁴⁰ or a courtyard complex that

⁴⁰ Ibid.

included, together with the hall, a kitchen, barn, stable, other buildings and an enclosed area (courtyard) entered via a gate. In the Latin East the manor houses, referred to here as rural estate centres, and isolated farmhouses were a Frankish introduction to the region appropriate for the type of agricultural activity and control of the countryside that were required. The Franks introduced for this purpose both the first floor hall-house and the courtyard type buildings found in the West. We can categorize these buildings more or less into four types:

- a) Large courtyard buildings including La Hadia (Khirbat Uza), Aqua Bella, ar-Ram and Jifna (nos. 16, 17, 18, 27)
- b) Irregular courtyard structures such as Burj Bardawil (no. 22)
- c) First-floor hall-houses such as Bethaatap (early stage), al-Burj (al-Joz) and possibly al-Burj (Qal'at Tantura) (nos. 21, 28, 29)
- d) Isolated farmhouses like Qalonie, Har Hozevim and Khirbat Lauza (nos. 25, 26, 32)

APPENDIX TWO

GAZETTEER OF ARCHAEOLOGICALLY RECORDED DOMESTIC SITES IN THE LATIN EAST

A: *Town Houses*

The urban sites discussed here are Acre, Arsur, Caesarea, Caymont, Chastiau Pelerin, Famagusta, Jaffa, Jerusalem, and Nicosia.¹ These are by no means the only towns in the Latin East, but they are the only sites for which we have published archaeological evidence for houses or sufficient documentary evidence to enable us to learn something of the nature of the domestic buildings they contained. Of these sites, Acre and Jerusalem were by medieval standards fairly large towns, although I would be reluctant to hazard an estimation of their population and to date efforts in this direction have proven unreliable at best and entirely misleading at worst.² These two towns were the major urban settlements in the Kingdom of Jerusalem, Jerusalem being the religious and administrative capital and Acre, the kingdom's commercial centre and also the seat of its administration after 1191. However, whereas Acre is a rich source for archaeological and written evidence on Frankish housing—indeed, by far the most important source of such information—Jerusalem is remarkably lacking in archaeological remains of domestic buildings and is, in this area, considerably less

¹ On Caymont see the comment regarding its status above, Chapter 3, n. 2.

² For example, J.C. Russell, "The Population of the Crusader States", in N.P. Zacour and H.W. Hazard eds., K.M. Setton, gen. ed., *A History of the Crusades*, vol. 5, Madison, WI., 1985, pp. 305–6 makes the entirely unfounded statement that Acre was the size of Hebron and gives its population in 1200 at 5,625, just over half that of Jerusalem and less than that of Gaza! Benvenisti, 1970, pp. 26–27, estimates that Acre, like Jerusalem and Tyre, had a population of around 30,000. He does not explain how he reached this figure, although he gives a population density (greater than that of Jerusalem) based on his estimate of the size of the city (inaccurate as the recent study by Kedar, 1997, has shown). He does not apparently take into account some important factors—the height of the buildings in Acre, the changing seasonal population size due to the part-time residency of a large number of Italian merchants and the possibility of considerable tracts of open land within the city walls. Recent archaeological discoveries by Martin Peilstöcker and a discussion of the possible location of the walls of Jaffa by Benjamin Kedar (Kedar, 2006b, pp. 105–7) show that that town was probably also considerably larger than Benvenisti's conservative estimate.

well documented than Acre. The reasons for this are discussed below.³ Tyre, another, perhaps equally large town, is at present completely uninformative regarding archaeological remains of domestic buildings, although it is well documented in thirteenth century sources. Caesarea, Jaffa and Caymont have been subjected in recent years to excavations and surveys which have produced a body of archaeological material relating to domestic buildings. Nicosia and Famagusta have remnants of domestic buildings, some of them dating to the period after the fall of the mainland and sometimes far better preserved than the remains in the Kingdom of Jerusalem. Many of the houses that survived into the twentieth century but have since disappeared are recorded in the important publication of Enlart (1987).

1 *Acre (Akko)*

In the two centuries of Frankish rule Acre was a major town, its status in the Kingdom of Jerusalem based on the role it fulfilled as the main port of the kingdom, the chief centre of commercial enterprise and administrative capital of the kingdom following the loss of Jerusalem. Modern Akko (map ref. 1568.2586) is by far the most productive source of archaeological evidence for urban domestic building of the Frankish period.

Acre is situated on a small promontory at the northern tip of Haifa Bay. It is the best natural harbour on the coast and is reasonably close to Jerusalem; consequently it came to fulfil the role that, in earlier times, the artificial harbour of Caesarea had fulfilled. Most maritime trade between the Crusader states, other Mediterranean cities and the West was channelled through its port. As a result of this intensive commercial activity and of the presence of communities of merchants, notably those of Genoa, Venice and Pisa, Acre expanded and developed into a major city by medieval standards. In reward for their aid to the kingdom, the merchant communes received important possessions and privileges and played a major role in the city alongside the aristocracy, the Church, the Military Orders and monastic and other communities that made Acre their headquarters after the loss of the hinterland. Acre itself fell to Saladin after the Battle of Hattin (1187), was recovered by the armies of the Third Crusade in 1191 and served

³ See below, p. 263.

as capital of the rump kingdom until it fell to Malik al-Ashraf in May 1291. The city was then systematically dismantled by the Mamluks to prevent its recovery by the Franks. This dismantling of Frankish Acre was, ironically, to lead to the preservation of many Frankish remains once the Turkish town of Akko was rebuilt from the middle of the eighteenth century on. The Turks built their houses above the Frankish remains or incorporated the ruins in their new buildings. An important survey of Frankish building carried out in the early 1960s recorded over a hundred buildings dating to the period of Crusader rule, and intensive excavations in the city, particularly those carried out by the IAA since 1990, have uncovered many monumental and domestic buildings in the city, mainly within the Turkish city walls.

House 1:1

This is an apartment building of the type sometimes referred to in thirteenth century documents as a *palazzo*.⁴ The ground-floor level alone has survived, consisting of nine groin-vaulted bays supported on solidly built piers (Figure 65). These piers are of varying proportions, generally no more than 1 by 1 m., incorporating some very large ash-lars. This ground-floor hall covers an area of 11.5 by 12 m. (138 square m.) and is constructed of dressed sandstone and occasional limestone blocks. Some of the stones evidence typically Frankish diagonal tooling. Because the original floor level was considerably lower than at present, the height of these vaults is uncertain (probably about 6 m.). The bays to the west are lower than the others. The vaulting is constructed of small brick-shaped stones set in mortar and plastered over. What appears to be original plaster can be observed in places. On the north is a small niche of obscure purpose and a door. Above the street door is a pointed-arch window.

House 1:2

This is one of a number of houses built on a long narrow plot located in what Kesten referred to as the “Burgus Novus”.⁵ On this building he writes:

⁴ See above, pp. 79–80.

⁵ See Kesten, 1962, p. 19.

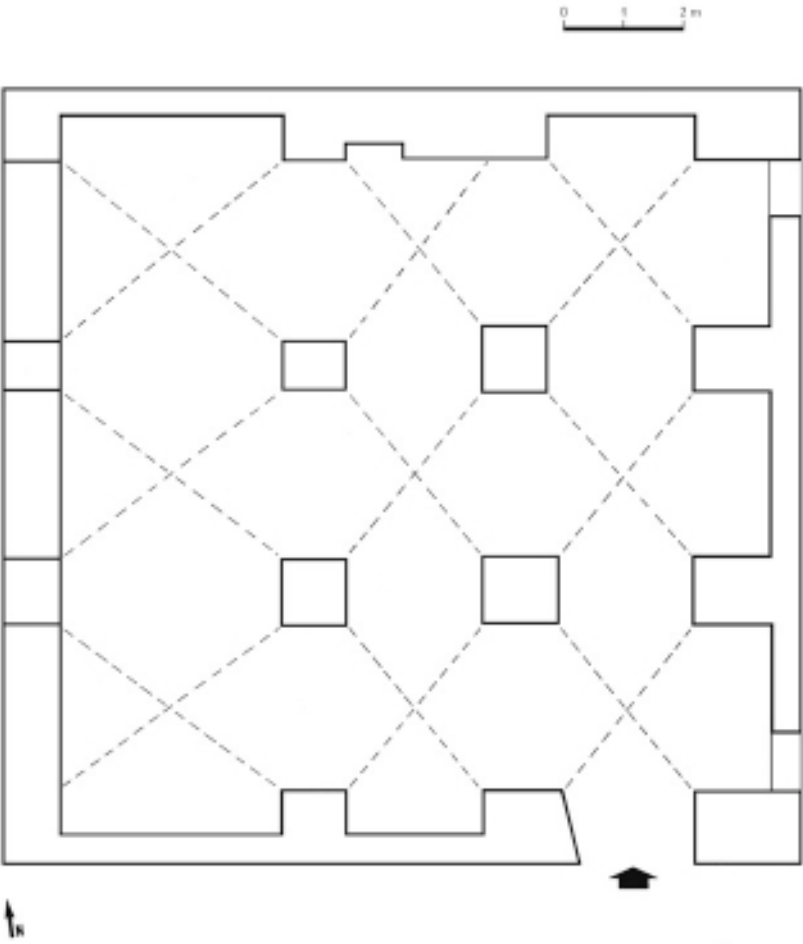


Figure 65. Plan of palace in Acre (House 1:1) (drawing by author).

The original form of building (76) is still obvious, even though it has two additional stories. The old un-plastered walls of the central courtyard are still in existence, and perhaps also are the vaulted ceiling of the ground floor—originally the roof. The impression is surprising. We have no doubt that this is a house which was not destroyed together with the rest of the Crusader city, and remained fit for further use.⁶

This house (which I examined in November-December 1992 but was unable to measure) has two groin-vaulted rooms with a central courtyard. The floor level of the courtyard is at present lower than either room, while the room to the west is considerably higher than that to the east. Courtyards appear in other examples of houses built on the *burgage-plot* plan. For example Kesten refers to:

small units built in a row, the façade usually formed by a single room, and the partition walls shared by the houses they separate. The standard plan consists of one room, entered from the street, with a small, central courtyard behind and the second room beyond. At one time the houses had only one storey and did not rise above the level of the wall [presumably the city wall]. This form of building recurs again and again in the quarter and even today it may be seen in a number of houses although it is often obscured by added structures, especially steps leading up to the upper storeys which were built in later periods.⁷

House 1:3

This house was not surveyed but only superficially examined. A narrow passage ending in a low arch gives access to a small courtyard beyond which is another house on a long, narrow plot. It appears to consist of two small groin-vaulted rooms with a thick wall between them. A door to the west gives access in the direction of the sea.

House 1:4

This house (surveyed December 1993) is of the type Kesten referred to as: “a more elaborate type of building, in which the rooms are arranged around an inner courtyard which is partly roofed”.⁸ It consists of three groin-vaulted rooms forming an L shape, with a small courtyard completing the rectangle (Figure 66). The overall area is

⁶ Ibid., p. 16.

⁷ Ibid.

⁸ Ibid.

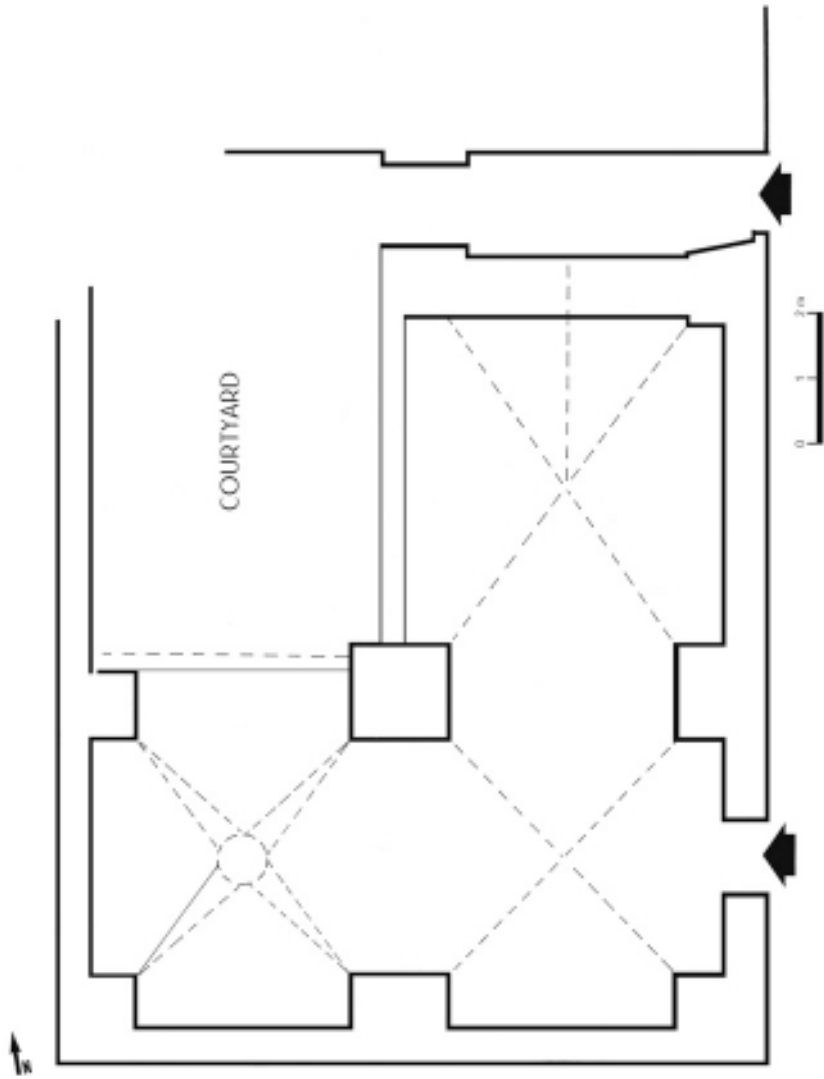


Figure 66. Plan of house with courtyard in Acre (House 1:4) (drawing by author).

c. 540 square m. Possibly there was another room to the west. On the northern side is a narrow barrel-vaulted passage about 6 m. in length with arches at either end, which leads to the courtyard. It has a broad gate 1.43 m. wide built into one of the piers of the adjacent rooms, and the surviving springs show that it was originally arched. The inner arch leading to the courtyard is low and 1.36 m. wide. A piece of simple carved moulding is reused on the inner side of the gate. The north wall of the courtyard has been partly reconstructed. It displays a number of cross-shaped masons' marks. Many of the stones are dressed with the typically Frankish diagonal tooling. The courtyard extends west and south beyond the inner gate, but it is much reduced in size due to modern construction to the south. The house may have originally been entered on this side. Today it is entered further south, directly from the street, and consists of three fairly large groin-vaulted rooms, the vaults supported on three massive piers. The room to the south-west has a reconstructed folded-vault that rises to a shallow dome in its crown, clearly of Ottoman date. The other two have simple groin vaults. That of the north-eastern room apparently extended into the short barrel vault that covers the passageway. There are two windows in this room but they appear to be of later date.

House 1:5

This is a large building of the "palace" type located in the Genoese quarter. It covers an area of 17 by 22.5 m. (382.5 square m.). Its surviving ground floor consists of twelve well-constructed groin-vaulted bays supported on massive piers (Figures 67, 68). The upper floors were rebuilt in a very grand manner in the nineteenth century. Kesten observed only one third of the building, which at the time was filled with debris. Consequently he misinterpreted it as an elongated hall of four bays. The entire ground floor has since been cleared and I was able to examine all but the three bays on the south which are walled off and inaccessible but whose appearance could be estimated. No two bays are of the same size, and the piers supporting them vary in size and are, in some cases, of irregular shape. It is difficult to estimate the original full height of the ground-floor level, but it was probably more or less as it is today, about 6 m. Transverse arches are found between some but not all of the bays. Built into at least two of the piers are flues and there are some openings in the vaults. There may have been a door at the back.

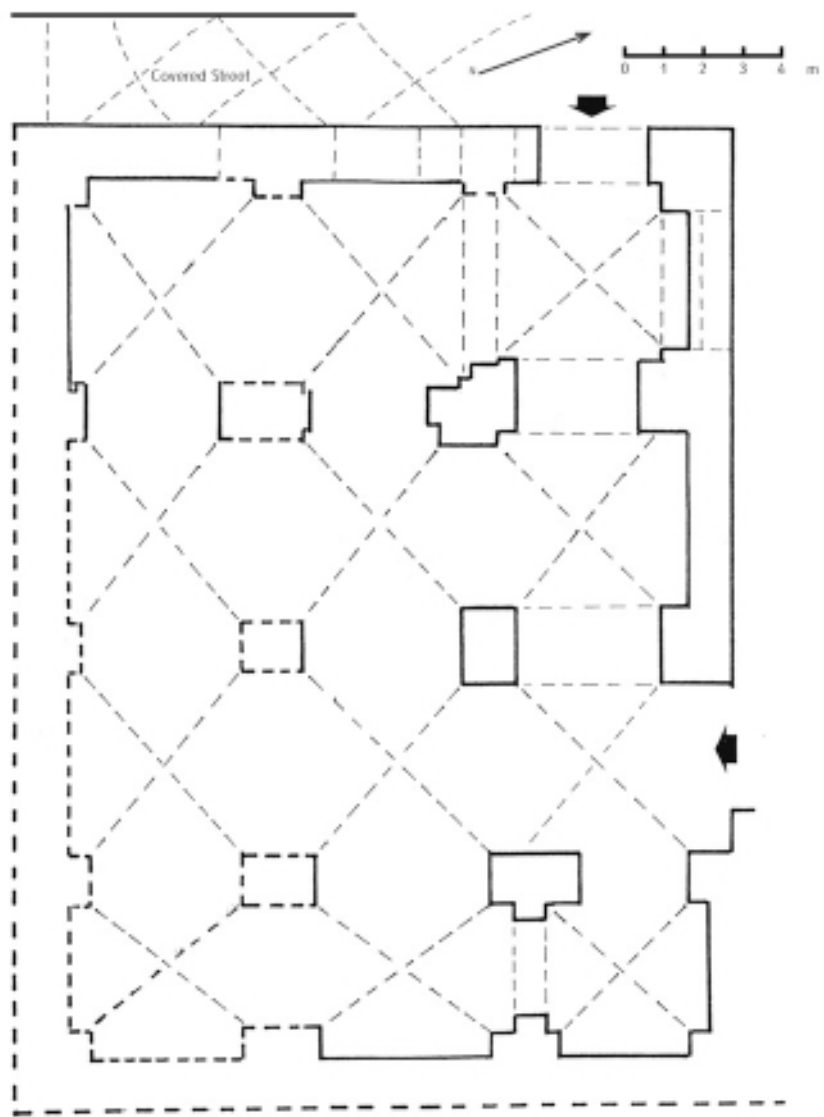


Figure 67. Plan of palace in Acre (House 1:5) (drawing by author).



Figure 68. Interior of ground floor hall of palace in Acre (House 1:5)
(photograph by Alex Kesten, courtesy of Amitai Spitzer).

Today this building is entered via a narrow vaulted lane on the western side. Originally it had three large arched doors on this side. These were later blocked, and at some time the northernmost door was broken through to construct the present large doorway. These doors would originally have served as entrances into the shops and the storage area that were located on the ground floor level (shops are frequently mentioned on the ground floor of palaces).⁹ There appears to have been a lane along the northern side of the house, where there is now a staircase leading to the present upper level. At least two arched entrances, possibly also shop openings, were located on this side.

House 1:6

This house in the Genoese quarter was described by Kesten as "...a mansion or home of an important family".¹⁰ More likely, like most of the larger houses in Acre it was an apartment building with rooms and apartments rented out or sold to a number of merchants. At the time of my survey I was unable to enter the interior of this building, but Kesten's description can fill us in with some of the details:

There are many remains of walls and perhaps ceilings of the period which give an idea of the original form of the house, although there have been numerous additions and drastic alterations above the first floor. Large rooms are arranged around a rectangular courtyard into which all doors and windows open. The present entrance to the house is actually a breach through one of the rooms. Inside the courtyard the original entrance may be clearly seen in the west. A side corridor leads to rooms mainly used as kitchens, store-houses and so on. Traces of the stairs which led from the courtyard to the roof may still be seen. Above some of the doors there are various signs carved in stone. Some of the vaulted rooms are especially interesting. Most of the walls are extremely thick.¹¹

This building is located next to what was probably the Genoese square in which stood the Church of San Lorenzo, just west of the covered market street, apparently the Via Cooperta. It covers an area of c. 616 square m. On the southern façade facing the square are a number of masons' marks, and on the upper floor level is a window with

⁹ For example, the *Palace of the bailli*: "Iste sunt stationes et habitationes, que sunt sub palatio, ubi habitat baiulus...", Berggötz, 1991, p. 390.

¹⁰ Kesten, 1962, p. 15.

¹¹ Ibid.

“dog-tooth” moulding. I have seen only one of the signs carved in stone above the doors that were referred to by Kesten, and it appears to be of comparatively recent date. The two arched alcoves on the eastern side of the house which are decorated with alternately coloured stones (*ablaq*) may also be original Frankish work; this decorative technique is known in Frankish building.¹² Above a door on the northern side of the courtyard are three carved consoles.

House 1:7

Another of Kesten’s “mansions” is now built over by a large Ottoman palace. It has a partly roofed courtyard surrounded by a number of rooms of varying size.¹³ The thick western wall of the Frankish house can still be observed along with other parts of the original house. In one of the rooms is a well-constructed cistern belonging to the original house. Part of a medieval capital was reused in the later construction of the courtyard.

House 1:8

This courtyard house has survived almost intact on its ground-floor level. Part of the upper storey may also be of Frankish origin. The ground-floor level is now divided into two separate properties with the original doors and windows between them now blocked. A large part of the ground floor was not accessible at the time of my survey in 1993–94. The entire area of the building is estimated at 320 square m. It was built around a central courtyard, the apartments taking up three sides and the upper level accessed via a staircase near the entrance to the courtyard (Figure 69). The house underwent several changes, most of these having taken place in the Frankish period. Modern changes are mainly the reconstruction of the upper level, which must have been destroyed in 1291.

Entrance to the house today is apparently via the original entrance, an arched doorway from the street on the south. This gives access to a high, narrow, vaulted passageway 1.2 m. wide and 5.4 m. long running east-west and opening into the courtyard via a door on its left-hand

¹² See for example alternate sandstone and limestone voussoirs used in the Sea Castle at Sidon, H. Kalayan, “The Sea Castle of Sidon”, *Bulletin du Musée de Beyrouth* 26 (1973), in the sea gate, Plate III. 4, 5 and in a pilaster of the chapel, Plate 4. 3.

¹³ See Kesten, 1962, p. 17.

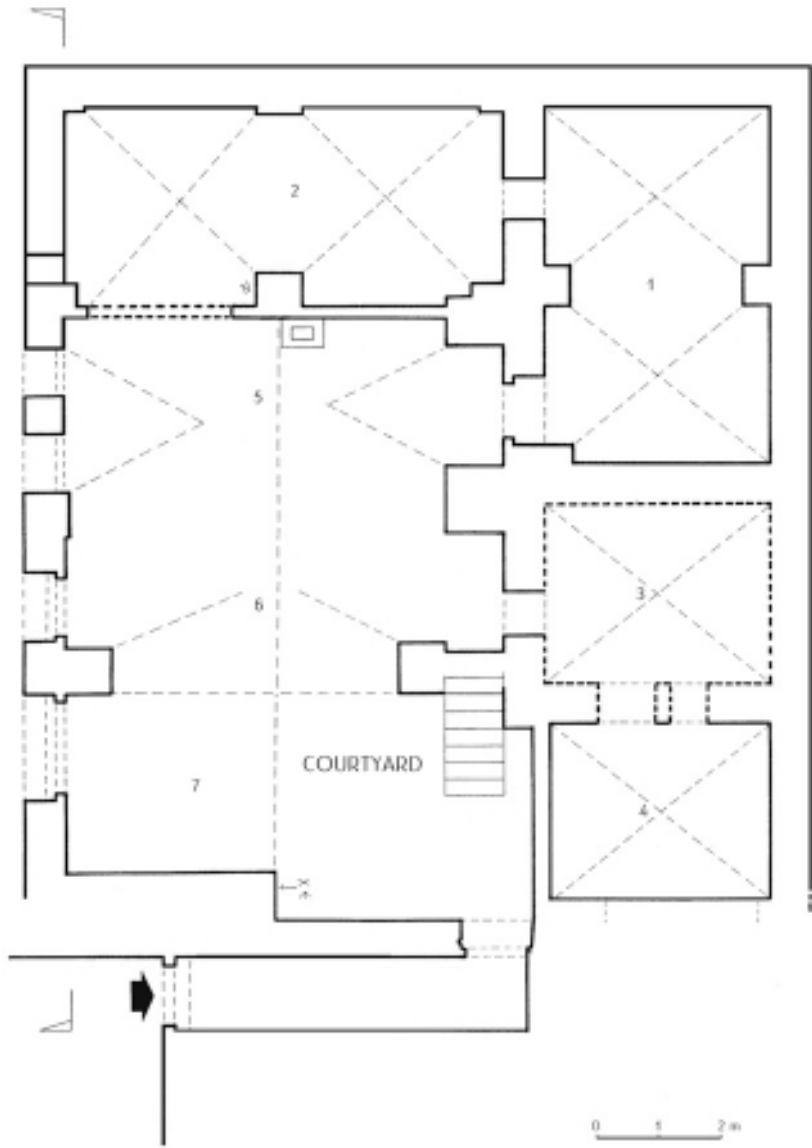


Figure 69. Plan of courtyard house in Genoese quarter, Acre (House 1:8)
(drawing by author).

side forming a bent axis entrance typical of Arab domestic buildings and adopted in many Frankish courtyard houses. The passage vault is cut by two adjacent vaults, and high on the wall on the right-hand side is a small window with a carved marble lintel (Figure 22). The doorway into the courtyard from the passage has a socket in the lintel for a single-leaf door. The present lintel is of wood and must have replaced the original one. On its right is a cylindrical socket for the door hinge pivot. Above the lintel is a filled-in relieving arch. In the left-hand doorpost is a vertical slot for a no longer extant mechanism for bolting the door.

At present only a small portion of the original courtyard is open to the sky. The remainder is covered by later additions to the building: a half groin vault on the north and a later half barrel vault, built against the inner vault and the courtyard wall. This is archaeological evidence for a phenomenon recorded in medieval towns where previously open spaces were made use of to expand housing. Such encroachment into the courtyard area suggests a considerable increase in the number of occupants of the house and may be evidence for a general increase in the population of the city, in this case perhaps following the recovery of Acre in 1191, when refugees from the inland towns and those not yet recovered inundated the city.¹⁴ This increase was felt throughout the city and was no doubt responsible for the large expansion of the city beyond its old wall to the north (Montmusard) and to the east.¹⁵ Another side effect was probably a decline in general living conditions in the older part of the city.

The original courtyard had on its right side three small groin-vaulted rooms, only two of which could be observed. I was unable to gain access to the central room of the three, which was entered both from the courtyard and from the vault to the south. The north-eastern room measures 3.5 by 5.7 m. and is covered by two groin vaults. The present floor level is at least 50 cm. above the original level. The vaults spring from the corners and from two pilasters positioned half-way along the east and west walls. Access to this room is via a door at the south-west corner which leads into a barrel-vaulted chamber—the northern end

¹⁴ In other Near Eastern cities a similar process was taking place. Writing about medieval Cairo, D. Behrens-Abouseif, (1989, p. 35). notes: "Domestic architecture appears to have undergone a parallel development to that in religious architecture, as courtyards became reduced and roofed and lateral *iwans* became mere recesses."

¹⁵ On the expansion of Frankish Acre see Kedar, 1997, pp. 157–80.

of the courtyard in its original form. Above this door is a window (58 by 80 cm.) extending up to the ceiling. On the same wall at its northern extreme is another blocked door, 70 cm. wide, also with a window above it (58 by 80 cm.). The door has a single stone lintel. The room to the north of the courtyard measures 3 by 7 m. It has no wall to its south but only a central pier. To the west of the pier there had formerly been a thin partition wall, since destroyed, with a wide door that gave access to the room to the south. In the south-west corner of the room was a window, 43 by 80 cm. which is now blocked.

South of this room is a barrel vault which has deep excisions on either side where doors and windows have been constructed. On the east side are arch-shaped supporting piers, while on the west are supports like groin vault springers. A feature of interest in this room is a chimney flue that cuts through the vault on the northern side against the pier and partition wall (Figure 49). The flue, rectangular in section, is built of the same sandstone as the rest of the construction. It contains traces of soot on its interior. It has been blocked above and has been destroyed about 50 cm. below the vault. It would be necessary to clear the ground below to find traces of the hearth. On the western wall to the south is a blocked door with an arch formed of step-joggled voussoirs that originally gave access to the part of the house to the west that is now inaccessible.¹⁶ South of this room within the former courtyard another room has been added, roofed with a half barrel vault. It post-dates the former room as an encroachment into the area of the courtyard then still open. The remaining section of courtyard was also eventually partly roofed over on its western side with another barrel vault.

House 1:9

This house is now divided between two properties, and only a small part of the Frankish building survives. It is located in the south of

¹⁶ Joggled voussoirs are commonly attributed to Mamluk architecture, where they frequently appear with *ablaq* (different coloured stones used alternately). See above, p. 68. However, they need not be seen as evidence for a post-Frankish date. Joggled and stepped voussoirs are found in pre-Frankish architecture as well and are occasionally found in Frankish buildings—for example in the gate to the inner ward at Belvoir Castle and in a window at the Château de Giblet (see un-numbered drawing in P. Deschamps, *Le Châteaux de Croisés en Terre Sainte 3, La Défense du Comte de Tripoli et de la Principauté d'Antioche*, Paris, 1973 (Fig. 99).

the Genoese quarter near to a vaulted passageway that Kesten identified with the gateway to the Templar quarter.¹⁷ A courtyard is entered through a narrow gate, 1 m. wide, and via a 1.5 m. wide vaulted passage, on the northern side of which are masons' marks. There is corbelling over the northern door. On the southern and eastern sides are groin-vaulted rooms, and the southern part of the courtyard has an open vault or *iwan*.

House 1:10

A large hall measuring 156 square m. is formed of a series of adjoining groin-vaulted bays, in this case four bays and a single central pier (Figure 70). As is the case in most Frankish vaults, the construction is of small irregular stones and the arrises form a herringbone pattern. There is a door at the northern end of the west wall and an external staircase. High on the eastern wall are two windows. Outside the door and to its north is a staircase.

House 1:11

This house has two units and a small attached courtyard at the front. On the southern side are two connected, parallel, groin-vaulted halls, the eastern one measuring 4.3 by 10.2 m. and the western hall, 3.2 by 8.5 m. (Figures 71, 72). The northern wall of this southern unit, which faces the courtyard, appears to be a later addition. The southern bay of the eastern hall is somewhat lower than the other. Between the two halls is a well-constructed flue of uncertain use. In the ceiling at the southern end of the western hall is a chute. Such chutes appear in a number of houses in Acre and are recorded in sources.¹⁸ They may have served for waste disposal from the upper floors.

On the east of the courtyard is a small two-storey unit, with two groin-vaulted bays on the ground floor measuring 4.3 by 6.5 m. A staircase on the northern side of the courtyard leads to the upper level of this unit; the dating of the staircase and the upper level balcony is uncertain but appears to be later than that of the lower level. A change in alignment of the supporting pier of the balcony suggests that it may have belonged to an earlier staircase.

¹⁷ Kesten, 1962, p. 55 (the Templar gate is no. 97).

¹⁸ Bresc-Bautier, 1984, no. 111.

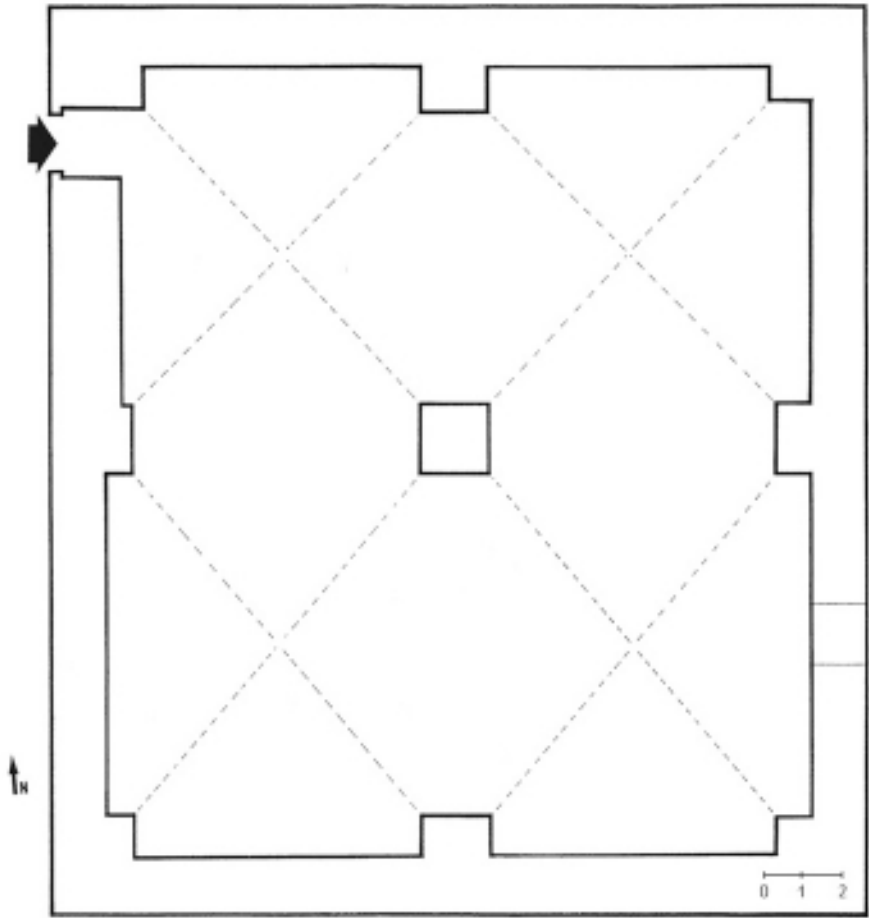


Figure 70. Plan of ground floor of palace in Pisan quarter, Acre (House 1:10) (drawing by author).

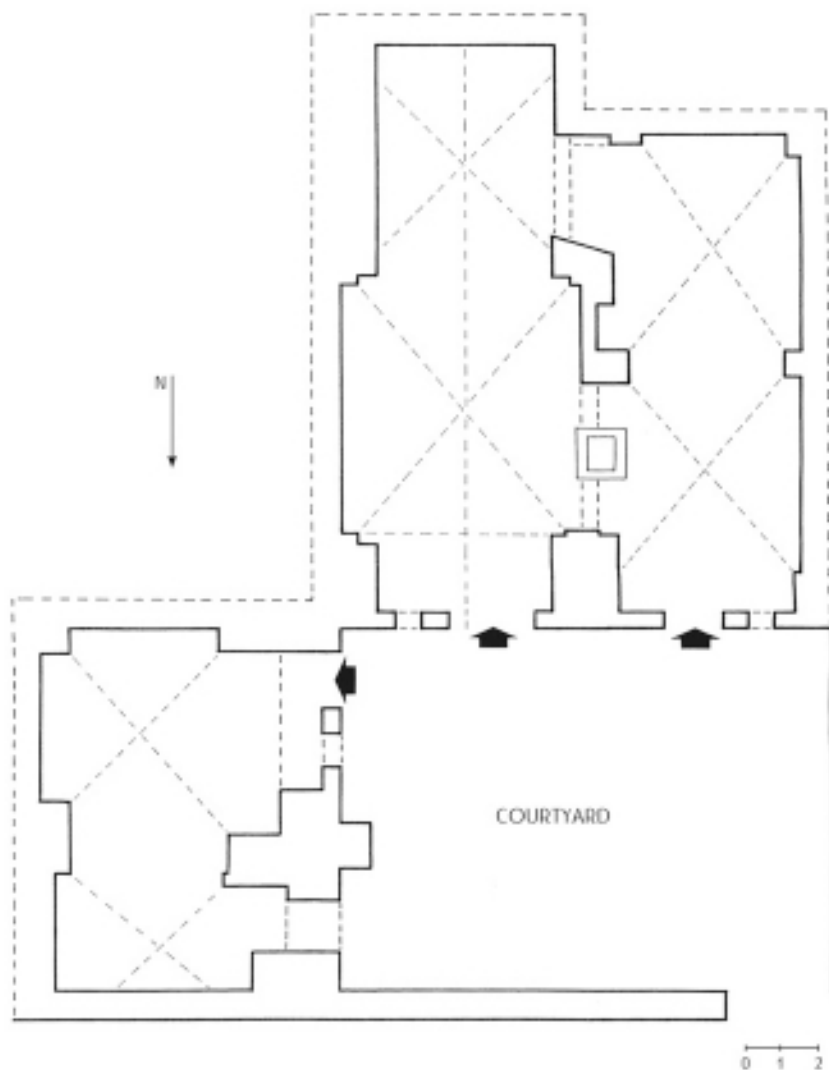


Figure 71. Plan of houses with attached courtyard, Pisan quarter, Acre (House 1:11) (drawing by author).



Figure 72. House with courtyard in Pisan quarter, Acre (House 1:11)
(photograph by author).

House 1:12

These partial remains of a house consist of two adjoining vaulted rooms and another small oddly shaped five-sided vault at a slightly higher level on the south-west corner. An arch spring shows that the building originally continued in some form to the north. There is a blocked arch on the western wall of the west vault and three windows very low on the northern wall, evidence for the original ground level having been over 1 m. below the present level. On the southern wall of the eastern vault is a small arched niche against the easternmost vault spring. The western room measures 4.7 by 6.6 m., the eastern room 6 by 6.6 m. A transverse arch divides the two.

House 1:13

This house on a narrow elongated plot covers an area of c. 104 square m. It has walls 1 m. thick and consists of two groin-vaulted chambers separated by a broad arch and a half-arch by the inner doorway. At its broadest point the house is 8 m. wide and the length is c. 13 m. The original entrance was at the eastern end of the north wall. There is now an entrance at the centre of the western wall.

House 1:14

Also on an elongated plot, this house consists of three adjoining groin-vaulted bays. A barrel-vaulted opening on the western side adjoining a small cemetery is probably a late addition. Two arched doorways open onto a narrow alley to the north. There were originally arched doorways to an adjoining building on the southern side.

House 1:15

This building, now known as the Rotary Building is the partially preserved ground floor of a large hall formed of nine massively-constructed groin-vaulted bays (Figure, 56, 73). The two bays on the southeast are destroyed. The vaults are otherwise well preserved and supported on massive piers. The level of blind arches on the western wall suggests that the floor level was considerably lower than today. The original height of the vaults was probably around 7 m. The northern wall, which adjoins the neighbouring building, appears to have undergone several reconstructions.

House 1:16

Located well below the present street level, a steep staircase of 11 steps leads to this house with a small courtyard measuring 6.2 by 6.5 m. (Figures 74, 75). On the north is a broad, low groin vault measuring 4 by 4.2 m. that opens onto the courtyard. To the east is a small groin-vaulted hall consisting of two bays, each with a door (that to the north is now blocked), and a window. The overall area of this house is c. 90 square m. The wall facing the courtyard is 90 cm. thick. On the southern wall of the courtyard is a blocked window. To the west is a small L-shaped vaulted alcove, 1.1 m. wide, above which is a tower, possibly in part of Frankish date. Behind the staircase is a second small double-vaulted recess, 1.4 m. wide.

House 1:17

A complex of at least three separate houses is clustered around a shared courtyard. A narrow vaulted passageway 12 m. long with three groin vaults which narrows from 3 m. to 1.7 m. turns 90° for 1.5 m. into a courtyard measuring 7.5 by 9.2 m. (Figure 76). On the eastern side of the entrance passage are three large arched recesses, possibly stalls for selling merchandise. In the passage are occasional stones with marginal

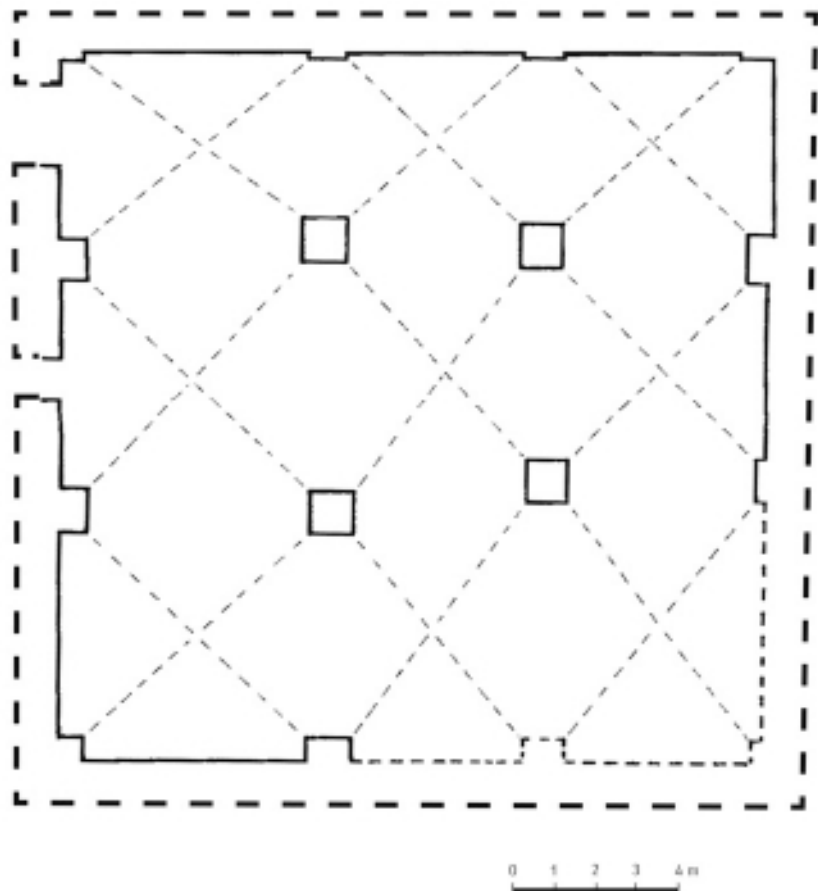


Figure 73. Plan of palace in Genoese quarter ('Rotary Building'), Acre (House 1:15) (drawing by author).

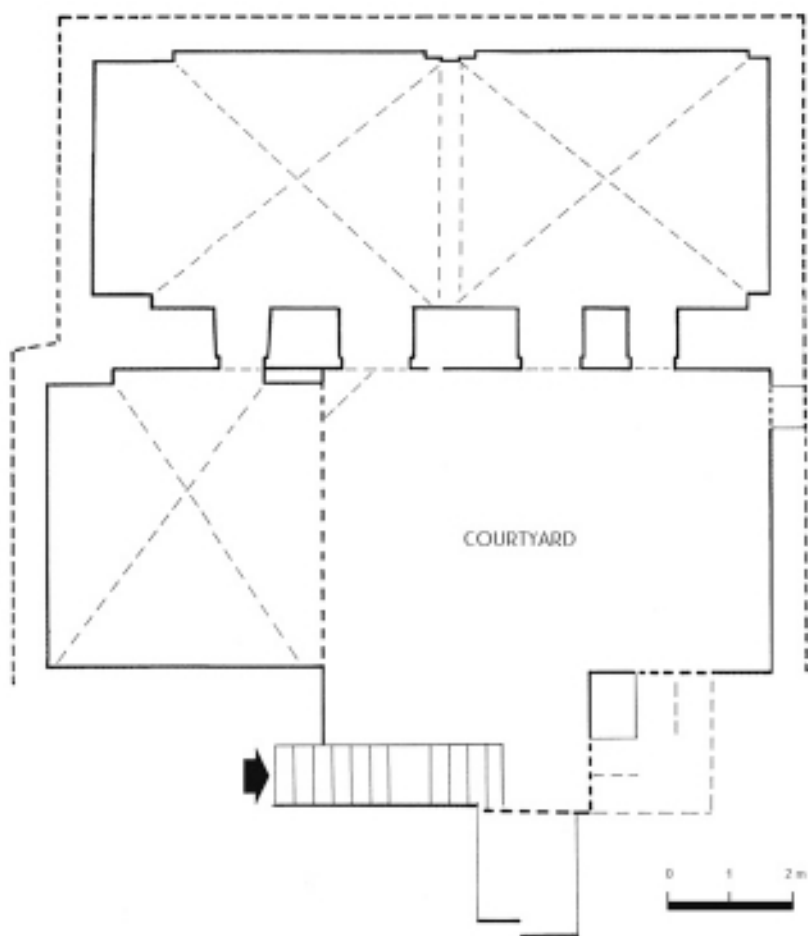


Figure 74. Plan of small courtyard house in Genoese quarter, Acre (House 1:16) (drawing by author).



Figure 75. View from courtyard of small house in Genoese quarter (House 1:16) (photograph by Alex Kesten, courtesy of Amitai Spitzer).

dressing, diagonal tooling and masons' marks. On the south is a broad groin vault 4.6 m. wide which is open on its northern side. On the north of the courtyard is a long wall with a blocked door and window; the latter has, above its arch an 18 cm. diameter depression for a *bacini* (glazed bowl used as decoration). On the upper level are two or three windows. From the north-west corner of the courtyard a narrow vaulted passageway extends to the west. To its south is a large groin-vaulted room measuring 5.2 by 6 m. which has a door and window on its eastern side adjoining the courtyard. Above this door is a stone socket. On the eastern side of the courtyard is a wall with two blocked windows at the present ground level and another at a considerably higher level, the latter with a roughly cut or broken lintel. On either side of the vaulted area to the south are small, groin-vaulted chambers (not examined). To the south of the courtyard a doorway at the end of an open vault gives access to a large building of groin-vaulted bays supported on two piers and separated by transverse arches. On the south and west walls of this hall are doors and windows.

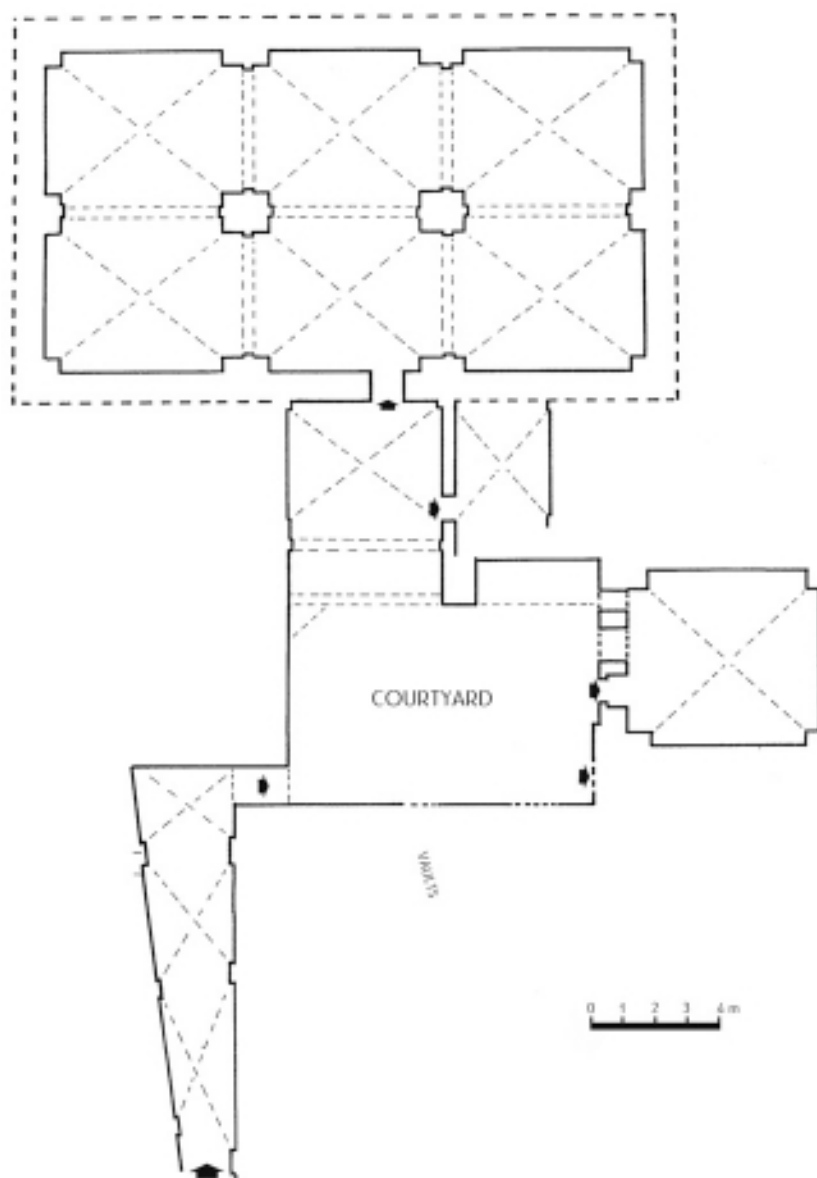


Figure 76. Plan of houses around communal courtyard in Genoese quarter, Acre (House 1:17) (drawing by author).

House 1:18

This was apparently the guardhouse located above the subterranean passage that controlled access from the Templars' palace to the inner harbour. This passageway was discovered in 1994; it was subsequently cleared and since 1999 is open to the public. The guardhouse has thick walls covered with plaster and numerous iron pegs, apparently intended to hold some sort of wall covering. On the northern wall is a door with windows on either side, one of which has a circular depression carved above it. The other is trefoil-shaped at its top. They originally both had iron grilles. A staircase gave access to the passage below, which could be cut off below the guardroom by means of an iron gate; it has not survived but its existence can be understood from small depressions around the arch.

House 1:19

This building is located on the southern side of the lane that rises up over the Genoese covered street (apparently the Via Cooperta). On its façade are a number of bossed ashlar. It is now entered via a narrow passage built into a large groin-vaulted room. It is difficult to interpret the original form of this house because much of it is of later construction. However, there were clearly at least two large vaulted rooms. In the walls of a small quadrangular courtyard are a number of doors and windows (one with a late *bacini* still in place).

House 1:20

This two-storey courtyard house, which covers an area of approximately 195 square m., is one of the best preserved Frankish houses in Acre (Figures 77, 78, 79). It is located in the Genoese quarter adjacent to and opening onto the covered street (the section cleared by the IAA in 1994, possibly the Via Cooperta). In addition to the entrance from the covered street there is an entrance from a side lane to the east. Large parts of both storeys survive, incorporated into the Greek Orthodox monastery complex, and some of the chambers have been recently renovated and are now in use. During the clearance of the covered street an arched entrance was uncovered establishing the relationship between the house and the street. The adjacent room opening onto the street must have served as a shop or for storage. The ground-floor level is almost intact, as is the large first-floor groin-vaulted hall.

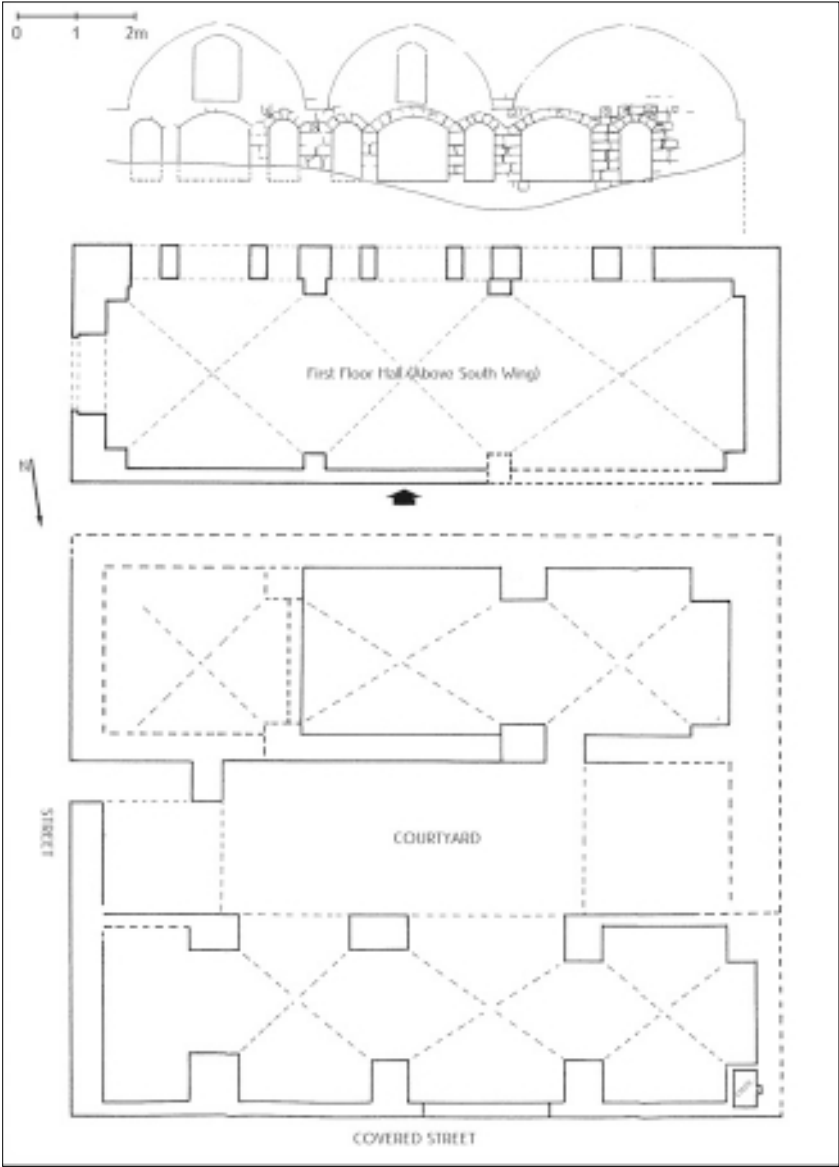


Figure 77. Plan of courtyard house in Genoese quarter, Acre (House 1:20)
(drawing by author).



Figure 78. First-floor hall in courtyard house in Genoese quarter, Acre (House 1:20) (photograph by author).



Figure 79. First-floor hall in courtyard house in Genoese quarter, Acre (House 1:20) (photograph by author).

The ground floor consists of eight rooms organised around a small open courtyard measuring 3.6 by 8 m. To the north are three groin-vaulted rooms, the western one with a well-constructed chute (possibly a sewage shaft) extending down from the upper floor. It has footholds on the interior. At the east end of the courtyard is a small, shallow barrel vault, open and low in height and above it a second small vault. These were probably used for storage. On the southern side are three groin-vaulted rooms. The central vault has partly collapsed, and that to the east is blocked. A vaulted chamber to the south-west has a door on its northern wall that connects to the courtyard and a window opening onto the shallow barrel vault.

Above the three vaults to the south is the first-floor hall (now restored), which measures 3.78 by 12.73 m. It is roofed with three groin-vaulted bays. The masonry consists of small, coarse *kurkar* ash-lars. At the western end of the hall high in the wall is a large embrasure window. To the north, three piers originally supported three arches, the central one apparently having been an open doorway (it had a threshold stone) and the other two possibly originally blocked with thin walling. On the southern wall are ten arched openings that would

have served as windows and cupboards. All of these are blocked or partly blocked. At the eastern end of the hall is a broad doorway with a small window above it. This door accessed onto a balcony or a landing to a staircase. It has not survived but its existence can be devised in the form of three consoles on the exterior wall.

House 1:21

This much-rebuilt house is located on the eastern side of the Genoese quarter, near where it borders on the Venetian quarter. It covers c. 120 square m., although the original size is uncertain. Entry to this property is from a modern street to the south via a groin-vaulted room; behind it is a second vault which has recently been cleared of refuse and is now open to the courtyard. An arched street door with round-profile moulding gives access, via a passageway and a second door with its postholes preserved, onto a rectangular courtyard 7 m. long but of uncertain width because of the modern construction. In the entrance passage is a blocked door 90 cm. wide. Its frame has the same round-profile moulding. A blocked double window is formed of two windows, each 60 cm. wide. The western wall of the courtyard has two blocked windows, one of them with a basalt lintel. Some of the stones in this wall have diagonal tooling and several have masons' marks (triangles and inverted Zs). The house on this side consists of three small groin-vaulted rooms partitioned by thin walls with niches, windows and doors in the 1 m.-thick side walls. The two rooms that have access onto the courtyard measure about 3.5 by 4.2 m. The southern of the two rooms is c.6.2 m. long and 3.5 m. wide. On the western side of the building is a lane accessed via a doorway 1.65 m. wide.

House 1:22

This house has been largely rebuilt but retains parts of the original Frankish structure. It covers an area of c. 120 square m. There is a fairly broad, short entrance passage from the street covered with a short barrel vault (2.7 m. wide, 2 m. long), a groin vault (3.8 by 5 m.) and another barrel vault, very narrow, between two arches. On the southern wall is a blocked arched doorway. Beyond the passageway is a long narrow courtyard measuring 3 by 11.9 m. on three sides of which are walls partly of original Frankish masonry. Directly south of the southern wall of the passage is a large pier—an exposed section of buried Frankish levels.

House 1:23

This house is located near the north-east corner of the Turkish walls. It was excavated in 1995 and was dated to the thirteenth century on the basis of coin and ceramic finds. It covers an area of over 120.4 square m. (probably considerably more as it extended well beyond the courtyard area that was exposed in the excavations). It is adjacent to two narrow paved streets, one to its south and the other to its east. There may have been a third street to the west. It was constructed of well-cut *kurkar* ashlar. The entrance is from the street to the south where there are two broad doorways divided by a pier that once supported a transverse arch. Four steps lead down from the door thresholds to the interior, which appears to have been a partly open courtyard. A central pier and pilasters on the walls once supported a series of transverse arches which suggests that this courtyard which was probably originally entirely open was eventually largely or entirely roofed over, probably with timber flooring of an upper storey. Carbonised beams of this flooring/roofing were found during the excavations.¹⁹ The walls were plastered on their interior. The eastern wall is 60 cm. wide, the western and northern walls 40 cm., and the southern wall including the steps 1.30 m. wide. The courtyard was paved with pebbles and mortar with patches of sandy material. On the eastern side of the courtyard is a paved area bordered with carved moulding covering a cistern (Figure 51) with a hollowed-out marble pillar used for a well head. The barrel-vaulted cistern runs south along the eastern wall. A second cistern on the west opened onto a stone shaft. A pier on the western side of the platform supported one of the transverse arches. Additional arches supported roofing to the west. At the northern end of the structure is a small walled cubicle of unknown use, possibly an area under a staircase leading to the upper-floor level.

House 1:24

Much rebuilding makes this house difficult to interpret. It is another house of the type Kesten referred to as a “mansion”, a large communal courtyard building with indirect access from the street via a passage into the courtyard. A number of masons’ marks can be seen on the

¹⁹ Similar burnt roof beams are found in many sites in the city and testify to the destruction wrought by the Malik al-Ashraf in 1291.

outer wall and some possibly original features within include three corbels on the northern wall of the courtyard.

House 1:25

This house is another example of the *palazzo* type communal apartment building, this one consisting of a large groin-vaulted ground floor of 12 vaults covering an area of 462 square m. (21 by 22 m.) supported on six massive freestanding piers and pilasters on the north and south walls. There were embrasure windows on the walls of each bay and possibly a door to the west which would have opened onto the thoroughfare leading south bordering the Genoese quarter to its west.²⁰ In the Ottoman period the house was extended to the west and was used as a soap factory.

2 *Arsur (Herzlia)*

The town of Arsur (ancient Apollonia), situated on a cliff above the Mediterranean Sea 18 km. north of Jaffa (map. ref. 1329.1781), was under Frankish occupation from 1101 to 1187 and from 1191 to 1265. It fell to the army of the First Crusade led by Baldwin I, aided by the Genoese fleet, in April 1101. Occupied by Saladin in 1187 following the Battle of Hattin, Arsur was recovered by the army of the Third Crusade led by Richard I in September 1191. In 1261 it was sold to the Hospitallers, but it fell to the Mamluk army led by Baybars in 1265 and was systematically destroyed. The destruction was so extensive that Arsur subsequently remained unoccupied, and the structures exposed in the excavations that began in 1977 are undisturbed by later levels of occupation.²¹

House 2:1

Part of a house (Figure 80) was excavated in Area E (adjacent to the southern city wall). This house, which was dated by ceramic and numismatic finds, was a reconstruction of an earlier house dating to the seventh century. The Franks reconstructed the original floor with a

²⁰ Information from Ron Beeri.

²¹ The excavations have been carried out by Tel Aviv University directed by I. Roll and E. Ayalon. See Roll and Ayalon, 1989, pp. 75–76; 1993, p. 74; Roll and Tal (eds.), 1999, pp. 37–41.

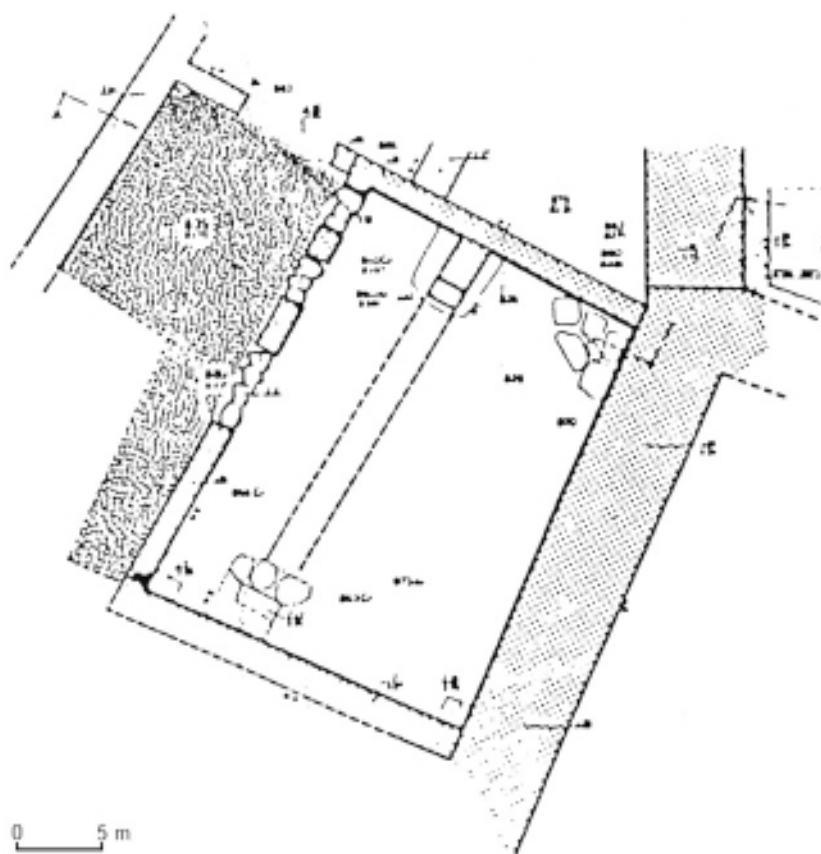


Figure 80. Plan of house excavated in Arsur (House 2:1) (courtesy of Israel Roll).

new plaster floor 50 cm. above the Umayyad level and raised the height of the walls. Excavations uncovered a cobbled courtyard or lane 2.5 m. wide, abutting which on the south is a broad room measuring 3.5 by 4.8 m. The façade has a central door flanked by two blocked windows. Similarly blocked windows in Caesarea are probably evidence of hasty attempts at defence at the time of the Mamluk attacks in 1265. The roof was supported by a single transverse arch that crossed the room at its centre. Similar arched supports were found in a house at Caymont.

House 2:2

Three rooms in Area H (located to the west, south of the castle) were partly excavated; these rooms were adjacent to one another. To the east was a courtyard with a packed earth floor. There were destruction fills including a thick layer of ash, probably from roof beams destroyed in the destruction of the town in 1265.

3 *Caesarea, Cesaire (Qaisariya, Qesaria)*

Caesarea is situated on the Mediterranean coast 50 km. north of Jaffa (map ref. 1401.2120). Frankish Caesarea was built at the centre of the Roman-Byzantine city adjacent to the remnants of the Herodian man-made harbour. The city had greatly declined in size by the medieval period. Baldwin I occupied Caesarea with the aid of the Genoese fleet in 1101. The Genoese received a third of the city. It became the see of an archbishop. The octagonal Great Mosque which stood on the Herodian Temple platform and probably incorporated remains of the Byzantine church, was converted into the cathedral church of St. Peter. Subsequently a new basilica was built to replace it.

Caesarea was part of the royal domain until 1108, when it was granted to Eustace Garnier as the centre of an extensive independent lordship. It fell to Saladin in 1187 and the defences were destroyed. Retaken by Richard and the armies of the Third Crusade in 1191 it was later partly refortified by King John de Brienne and Leopold of Austria with the aid of the Hospitallers in 1218. The repaired defences were destroyed in 1219–20 by al-Mu'azzam 'Isa and repaired again in 1228. The impressive ruins of the fortifications that can be seen today belong largely to the final defensive works carried out by Louis IX in 1251–52. The city fell to Baybars after a two-week siege in 1265 and was completely destroyed by Sultan al-Ashraf in 1291.

At the time of the Frankish conquest of Caesarea in 1101, the destruction of houses was probably minimal. Here, as in Jerusalem, the Franks killed the occupants and took possession of their houses.²² Excavations have uncovered a number of houses of Fatimid/Frankish and Frankish construction within the city walls.²³

Houses 3:1–6

Over an area of c. 975 square m. along the eastern city wall and slightly to the south of the eastern gate is a row of domestic buildings that are partly exposed and have undergone partial restoration (Figures 81, 82). Additional domestic buildings have been exposed elsewhere within the city walls including the ongoing excavation of a house at the north-east corner of the city that has not yet been published²⁴ and an extensive quarter of the city to the west of the Herodian Temple Platform that is of Fatimid date. The houses along the eastern city wall and adjacent to a partly covered street were Fatimid houses that had been rebuilt and expanded in the thirteenth century, incorporating the earlier walls but adding many new walls and features.²⁵ These houses were dated on the basis of architectural, stratigraphic, numismatic and ceramic evidence. Perhaps the most precise evidence is the architecture itself. The houses are constructed together with the covered street, leaning against the city wall. As the latter most probably dates to the fortifications built by Louis IX in 1250–51 and as the city was occupied by the Mamluks in 1265 and subsequently destroyed we can conclude that these houses in their reconstructed Frankish stage date to the 14 to 15 years between these two events.

In the excavations of 1960–62 two of these domestic complexes were more or less completely exposed, a third house was partially excavated and possibly three others were exposed at surface level. Negev regarded the northern two houses, which are almost completely exposed, as a

²² WT 10:14(15).

²³ A number of excavations have been carried in recent years inside the thirteenth century walls. These include the work carried out in the early 1960s by the Israel Parks and Gardens Authority under Abraham Negev, joint excavations by Maryland and Haifa universities, and excavations by the IAA. I carried out a survey of houses along the eastern wall of the city in 1992, and a survey of a house in the north of the city was carried out by the British School of Archaeology in Jerusalem under Denys Pringle in 1979 and 1982.

²⁴ Personal communication from Sefi Porat.

²⁵ See Boas, 1998, pp. 77–79.

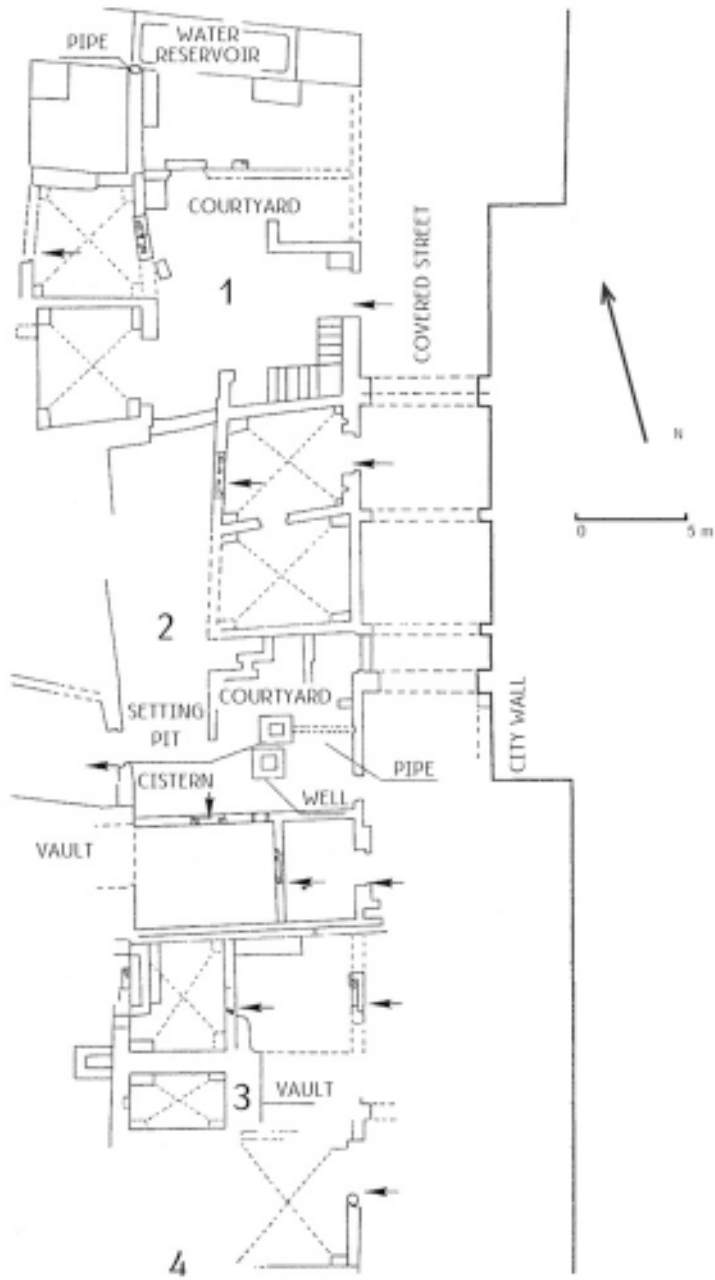


Figure 81. Plan of houses along eastern wall of Caesarea (Houses 3:1–4) (drawing by author).



Figure 82. House adjacent to eastern wall of Caesarea (Houses 3:2)
(photograph by author).

single dwelling unit; but it seems they are in fact two distinct houses, each with its own entrance from the street, courtyard, surrounding rooms, storage facilities and water collecting source. House 3:2 is the key to understanding the dating of the northern three houses and possibly of the entire group. Between this house and the city wall is the covered street now consisting of transverse arches (four surviving and partly restored). As these arches are built against the city wall they must post-date it (this means they must be later than 1250–51). The eastern wall of this house was constructed together with the covered street. This is seen in the lower courses of the street wall which also constitute the lower courses of the piers supporting the arches. Not only the piers and arches but the eastern wall and the walls perpendicular to it (and at a different alignment to the older walls in the complex) post-date the city wall. Even if, as Conder and Kitchener of the Survey of Western Palestine suggest, the city wall is older, dating to the fortifications carried out by Gautier d'Avesnes in 1218 (only the glacis in their view being part of the fortifications of Louis IX)²⁶ the date for

²⁶ Conder and Kitchener, 1882, p. 24.

these houses is still quite precise; between 1218 and 1265—that is, to within 47 years.

Construction of these houses, like the houses in all of the coastal towns, was almost entirely of the local sandstone (*kurkar*) cut into small ashlar held together with a thin layer of mortar. They have fairly rough surfaces, probably due to weathering of the stone rather than to the original finish. This would explain why there are no masons' marks and little surface tooling is to be seen; but it is also likely that many of these stones originated in the earlier Fatimid houses. These stones average around 20 (high) by 50 cm. and are up to 30 cm. deep. On the whole there is little variance in the quality of the stonework. However, at one place on the street façade there are slightly larger, more finely dressed blocks, about 40 by 65 cm. on their exposed face. They are also more neatly joined than the others and this section seems to be somewhat later construction than the rest, intended apparently to narrow a fairly wide entrance on the street, originally 3.2 m. wide, into a door that is 1.26 m. wide. The rather poor quality of most of the stonework would not have been noticeable (certainly not in the interiors) because it was originally plastered over, and traces of the lime plaster can still be seen. In places, the surface of the stone was incised to facilitate adhesion of the plaster. For the application of subsequent layers of plaster the lower ones were impressed with a small trowel to form a herringbone pattern. Incised decorations may have occasionally been applied for purely decorative effects. In the courtyard of house 3:2 (Figure 83) is a stone decorated in such a manner, rather like the decorations on grain bins in traditional Palestinian houses.

The rooms of these dwellings were roofed over with groin vaulting. None of these vaults remains standing today but they can be inferred by the presence of corner pilasters. Two types of paving are found in the houses. Within the rooms are large, close-fitting ashlar (c. 35 by 50 cm.), no doubt *spolia*. In the courtyard area of house 3:2 is paving formed of marble fragments laid on a thick foundation of lime and pebbles. The marble pieces of varying sizes are certainly *spolia*. The paving includes some sea-worn stones. Most of the doors entering from the street have a rectangular marble threshold with post-holes and bolt-holes.²⁷ The doorposts in house 3:2 have a number of

²⁷ Similar threshold stones are found in earlier buildings at Caesarea. See L.I. Levine and E. Netzer, "Excavations at Caesarea Maritima", *Qedem* 21, Jerusalem (1986),



Figure 83. Plaster decorated stone in House 3:2, Caesarea (photograph by author).

depressions—three horizontal depressions on the northern post, the upper one T-shaped, three horizontal depressions on the south post, with a square-shaped hole below the uppermost one. It appears that a bolt shaft was placed in the hole on the southern post and in the T-shaped depression on the north, and then slipped down into it.

In 1992 a window of unknown height, on the south wall of the courtyard of house 3:2 could still be seen. It was 50 cm. wide and had a simple narrow stepped panel on its northern face. By 1995 most of this window had collapsed. Such a window would have served to introduce light and air into the room on the southern side of the courtyard. The smallness of this window and its height were to retain privacy, as is consistent with Near Eastern tradition. A second opening on the same wall, also perhaps a window, has been hastily blocked.

The staircase in house 3:1 (Figure 57) would have given access to the roof or to a balcony or upper-storey apartment, although the latter

ill. 48. However they are also found in the village of al-Kurum where they are clearly not *spolia*.

seems unlikely considering the thinness of the walls. The lower section against the eastern wall of the house, beginning exactly at the doorway, is 80 cm. wide and the five steps are c. 35 cm. deep and 30 cm. high. They lead to a landing from where the staircase turns west against the south wall of the room. The width of this section of the staircase is 1.2 m. at its widest (at the upper step). Beneath the landing is a small vaulted recess 1 m. deep and 65 cm. wide, which is lined with plaster, certainly used for storage. Another cupboard is located on the western wall of a room on the west. It is 60 cm. high, 45 cm. wide and 66 cm. deep. The interior is plastered. Such built-in cupboards are a frequently found feature in Near Eastern houses.²⁸ They were used for storing household items. On either side of the main door of house 3:2 at a height of c. 145 cm. are small triangular niches 12 cm. wide, 20 cm. high and 10 cm. deep. These would have served to hold oil lamps. There are tether holes in the piers of the covered street on the northern side of the thick northern wall of this house as well as on the city wall near its south-west corner and also under the arch in the front room of house 3:3. These were drilled at the corners, through one face of the stone to the other.

In the courtyard of house 3:2 is what appears to have been an underground room. It is quite small and may have served for storage of food-stuffs or some valuable merchandise. It would appear to be too limited in space to have functioned as a *sirdāb* (a cool underground apartment used as a living space in the hot weather). The *sirdāb* was usually constructed at a depth of ten steps below the ground level.²⁹ This room is only a 1/2 m. below the ground level and is more likely a *matmura*, an underground repository for storing valuables.³⁰

Muqaddasi writing in the tenth century noted: "The drinking water of the inhabitants [of Caesarea] is drawn from wells and cisterns."³¹ Naser-e Khusraw's description of the system for collecting rain water in eleventh century Ramla could be applied to Frankish towns as well: "Their water supply is rainwater, and inside every building are pools to collect it so that there will be a constant supply."³² He notes that Caesarea was also well supplied with water: "Caesarea is a fine city with

²⁸ See above, p. 28 and Amiry and Tamari, 1989, p. 27.

²⁹ Ahsan, 1979, pp. 184–85.

³⁰ Goitein, 1983, pp. 74–75.

³¹ Muqaddasi, 1896, p. 55.

³² Naser-e Khusraw, p. 20.

running water and palm gardens and orange and citron trees.... There are fountains that gush out within the city..."³³ From this it would seem that the public water system was still operational in the eleventh century, and perhaps William of Tyre's reference to Caesarea's "*aquarum fluentium et hortorum irriguorum*" confirms the continued use of at least part of the aqueduct into the second half of the twelfth century, although this description could be interpreted as the breaking down of the system that occurred when the aqueducts fell into disrepair with water flowing from the swamps.³⁴ In any event, by the thirteenth century the Caesarea aqueducts were probably no longer in use, and if the system was still partially functioning its waters would probably have served public baths and fountains rather than private houses. Water for drinking, cooking, washing and other purposes was collected on roofs and paved courtyards; from there it would pass through pipes into deep sump shafts to settle, and the clean water would flow into the cisterns. The clean water could then be drawn through openings in the cisterns. Such an arrangement is known in Arab villages up to the twentieth century.³⁵ Numerous cisterns predating the Frankish period, found in the other excavations inside the walled city, show that their use need not be evidence that the Roman water system had ceased to function. No doubt cisterns were required throughout the period of the aqueduct's use to supplement the public water supply, and when the aqueduct ceased to function, they supplanted it. In house 3:2 a deep, narrow sump shaft built of coarse masonry, with traces of plaster still visible, is found in the courtyard directly against the opening of the adjacent cistern. The openings of both are about the same size (40 by 40 m.), but only the cistern is lined with a fine, well-preserved hydraulic plaster. The cistern is covered with a barrel vault extending to the west of its opening. On the wall to the east, directly opposite the

³³ Ibid.

³⁴ WT 10.14 (15). A. Reifenberg, in "Caesarea: A Study in the Decline of a Town", *IEJ* 1 (1950-1951), p. 28, discusses the deterioration of the aqueduct system, quoting a contract of Hugo of Caesarea which shows that the high-level aqueduct was out of use by 1166. He suggests (p. 30) that William of Tyre's reference to irrigated gardens and Jacques de Vitry's praise of the "*hortorum et pascuorum et aquarum fluentium plurimam.... ubertatem*" (*Historia Hierosolymitana*, cap. 24) are evidence that the low-level aqueduct was still functioning in the twelfth century. However, it should be noted that as late as 1421, when it certainly was no longer functioning, a similar description is given by Johannes Poloner: "It [Caesarea] has... a great abundance of gardens, meadows and running streams", *PPTS* 6/4, 1894, p. 29.

³⁵ Canaan, 1933, p. 24.

opening of the sump shaft are remains of a pipe that once descended from the roof carrying rainwater to the shaft. Other than in house 3:2, this system is found in several areas in the south (fields Z, I and TP in the joint Maryland University and Haifa University Expedition) and in the unexcavated northern half of the city. In house 3:1 there is no trace of a cistern, but at a higher level, on the thick wall to the north, is a plastered tank measuring 1.2 by 4.7 m. from which a pipe descends against the inner side of the wall.

House 3:7

This is one of the few Frankish remains within the walls that stands to any height (Figures 84, 85). Considered in the past to have been a church, it was first discussed in depth by Pringle.³⁶ It was a large and massively constructed barrel-vaulted structure some 7.5 m. wide and at least 17 m. long (c. 144 square m.). Originally it had been divided into at least four sections by transverse arches with chamfered arrises of which only two survive today. These spring from badly weathered decorated brackets that were attached (not bonded) to the stonework of the vaults. The vault itself is, like the rest of the building, constructed of *kurkar* ashlar. The north and south walls are c. 1.75 m. thick, that to the west only 50 cm. Remnants of a central doorway survive. The second bay from the east has two pointed-arch embrasure windows, one on each wall. There were doors in the north and south walls of the third bay. There is a vertical shaft in the south wall that Pringle suggests connects to a cistern underneath the building. Slightly south of the wall is a narrow opening to a deep underground cistern. Two blind arches in the north wall were possibly intended to relieve the weight of the wall over another underground cavity. Indeed one of the arches has a rectangular vertical shaft in its soffit, possibly for the discharge of a garderobe chute.

A staircase supported on a rising double arch led up to the first floor. The lower part of the staircase is not bonded to the wall. Traces of the first-floor apartments survive above the two northern and southern walls, including the remains of internal dividing walls and the upper floor. The already mentioned cistern shaft and possible garderobe shaft support Pringle's suggestion that the first-floor apartments were of a

³⁶ Pringle, 1993, pp. 182–83.

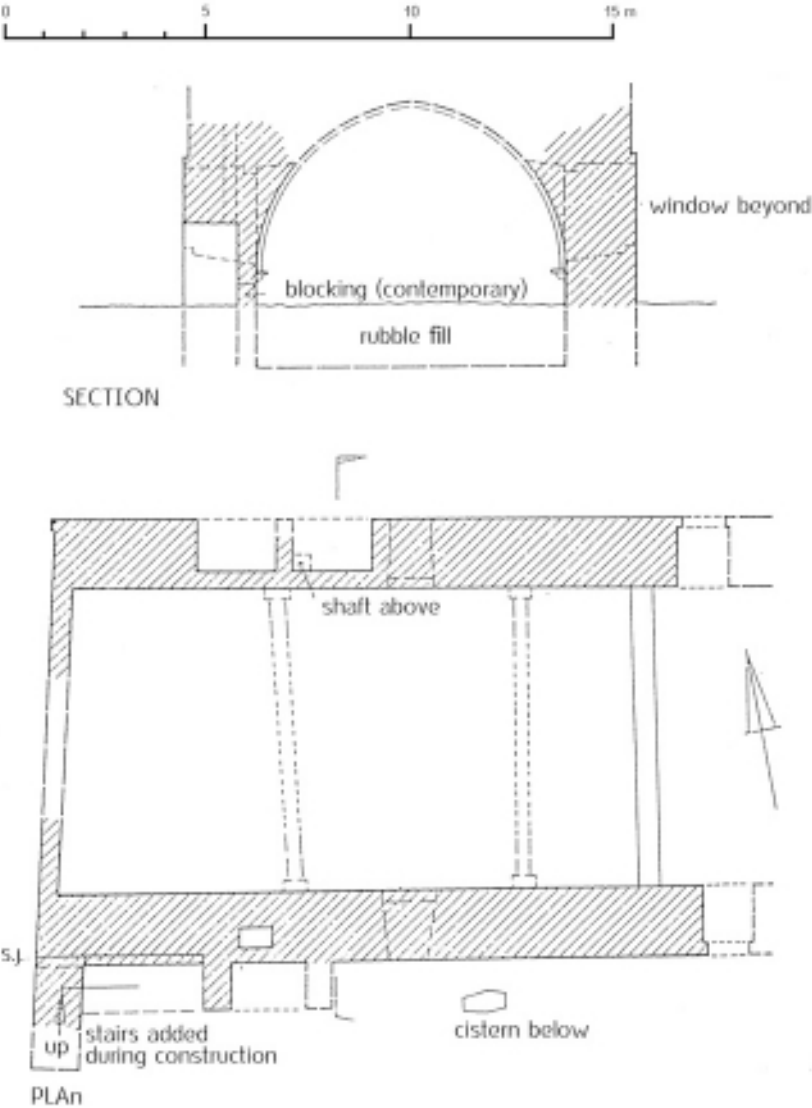


Figure 84. Plan of merchant house, Caesarea (House 3:7) (courtesy of Denys Pringle).



Figure 85. Merchant house in north of Caesarea (House 3:7) (photograph by author).

domestic nature. The massive construction of this building is very different from the other Frankish houses in Caesarea the suggestion that it was a wealthy merchant's house is a sound one. The ground floor could have served as a storage room (*cantina*) for the merchant's goods and possibly as a shop from which he sold them, while he lived in the apartment above.

4 *Caymont, Mons Cain, Caimum, Caimun (al-Qaymūn, Yoqne'am)*

Tel Yoqne'am is situated on the border of Mount Carmel and the Jezre'el Valley at a junction on the Acre-Megiddo road and the Via Maris (map ref. 1604.2300). The Frankish *casalia* on the ancient tell was first recorded in a bull of Pope Paschal II recording possessions granted to the Latin monastery of Mount Tabor.³⁷ Probably at first the site of a royal castle, Caymont appears to have become, by late in the twelfth century, the centre of a small lordship. It fell to the Muslims after the Battle of Hattin (July 4, 1187). Following the Third Crusade Caymont passed into the possession of Balian of Ibelin. From 1262 on

³⁷ For a historical outline of Frankish Caymont see Kedar, 1996, pp. 3–7.

the Templars held it until in 1283, under the terms of an agreement with the Franks, it passed to Sultan Qala'un. Although a small settlement, it might be regarded as a small town, at least by the thirteenth century, considering the presence of fairly substantial fortification walls and the fact that Caymont possessed a *court de borgesie*.

In two seasons of excavation in 1977 and 1978 two Frankish strata (with a secondary phase) were exposed on the north-western side of the tell.³⁸ In 1987 an excavation was carried out on the Frankish church, and in 1993 parts of the fortress and a private house were uncovered.³⁹

House 4:1

This house is located in the north-west corner of the city against the city wall (Area A3). It was excavated in 1978–79. The greater part of the house was exposed in the excavations (Figure 86). It measured 70 square m. At the centre is a courtyard measuring c. 7 by 7 m., paved with compacted plaster; it is surrounded by three attached rooms and bordered on the west by part of the city wall. In an earlier phase there were two or three rooms within the area of the courtyard. In the later phase the rooms gave access to the courtyard. The largest room is on the southern side of the courtyard and measures 2.5 by 7 m. The room to the east was only partly excavated. A small room on the south-west of the courtyard measures 1.5 by 3 m. Access to the house was probably from the east. At the south-eastern corner of the courtyard was a doorway, apparently arched. Voussoirs and ashlar with masons' marks were found in the vicinity. The walls are about 50 cm. thick and construction is poor, consisting of un-worked stones. There is a stone basin on the south-east of the courtyard and a water channel along the northern side which drained off through an outlet in the city wall. The plastered courtyard belongs to the later phase, after one wall running north-south and a second wall east-west had been removed and the rest of the surrounding rooms had been constructed. The city wall apparently dates from the earlier stage.⁴⁰

³⁸ The excavations were carried out by A. Ben Tor of the Hebrew University Institute of Archaeology in collaboration with the Israel Exploration Society. See Ben-Tor et al. 1996.

³⁹ See Pringle, 1998, pp. 159–61; Avissar 2005.

⁴⁰ Ibid., p. 72, Fig. 3.



Figure 86. Plan of courtyard house adjacent to walls in Caymont (House 4:1) (courtesy of Amnon Ben-Tor).

House 4:2

This house is located to the north of the church. It consists of a hall measuring 4 by 6 m. with two attached courtyards (Figure 60). The smaller one to the east (about 5 m. wide) is paved with stone flags. The larger courtyard to the north measures 6 by 8 m. and has a pressed-clay floor. The overall area of the house is 156 square m. Beyond it to the north were additional houses. In the large courtyard in the south-western corner is a latrine (Figure 53). It is well-built, consisting of a bell-shaped constructed pit covered with a stone slab with a hole in it. The pit extends to the north beyond the courtyard wall into what apparently was a road to the west between the Frankish tower and the house. This road was considerably higher than the level of the house and the vault of the latrine is built into the fill beneath it. The placing of the garderobe at a point distant from the door to the house recalls the words of William Horman who wrote in his sixteenth century Latin-English phrasebook, *Vulgaria*: "A wyse builder wyll set a sege house (seat house) out of the wey from sight and smellynge."⁴¹ A medieval term for latrine, *longaigne*, means "far off place".⁴²

Construction of the shorter walls of the house, preserved in places up to a height of 3 m., was formed of rows of brick-shaped stones placed vertically but somewhat askew, with stone chips between the layers (Figure 12). This is a rather unusual technique in Frankish construction. The exterior was covered with fine diagonally tooled ashlar. There were no masons' marks on these stones. A *tabun* was constructed in the small courtyard.

House 4:3

Another house excavated in what was designated by the excavators as Area B measured 5 by 10 m. (50 square m.) and consisted of a hall, the roof of which was supported by three transverse arches. The supporting pilasters were constructed against the long walls of the hall. The entrance was possibly from an adjacent north-south street. This type of roofing, quite typical of the Roman/Byzantine and Ottoman periods, is rather exceptional in Frankish houses but is occasionally found, for example, in the house in Area E in Arsur. Paving of the hall consisted

⁴¹ W. Horman, *Vulgaria*, London, 1519, 1530, reprinted 1926, C.XXIX.

⁴² See Holmes, 1952, p. 96.

of flat stone slabs. There were two Frankish phases in this house. In the second phase there are tabuns within the area of the hall.

5 *Chastiau Pelerin, Castrum Peregrinorum* ('Atlit)

Chastiau Pelerin and its *faubourg* are built on a small rocky promontory 30 km. south of Haifa (map ref. 1440.2345). The Templar castle, one of the largest in the kingdom, was constructed in 1217–18. Sometime thereafter, a small town developed between the castle and additional defences constructed further to the east. This settlement, or *faubourg*, was apparently begun fairly soon after the construction of the castle, and the excavator, Johns, noted that coins found in the stables at the southern end of the *faubourg* suggested it was in use for about 70 years.⁴³ The extensive cemetery to the northeast had about 1,700 graves, which suggests that the town had a sizable population. In 1265, after taking Haifa, the Mamluks attacked the castle and breached the town's defences, entering it and destroying all its houses. The castle itself was never breached but was abandoned in 1291.

Excavations of both the castle and the town were carried out in 1930–35 under the direction of C.N. Johns and were subsequently published in a series of detailed reports.⁴⁴ In the north of the town he uncovered medieval houses.

House 5:1

In the excavations carried out in the *faubourg* of Chastiau Pelerin ('Atlit) between 1931 and 1933, a domestic complex was uncovered in the north of the town. It received only minor comment in the publication but some further information is to be found in an unpublished field diary kept in the archives of the IAA at the Rockefeller Museum.⁴⁵ According to this Johns had uncovered the foundations of a house consisting of five or more rooms and an oven, probably in a courtyard (Figure 87). Construction was of rubble walls (c. 45 cm. wide). These survived to one course high. They had cut-stone thresholds with door-

⁴³ Johns, 1997 (6), p. 57.

⁴⁴ Johns, 1997.

⁴⁵ Permission to view these was kindly given by A. Rochman-Halperin of the IAA. The diary is now recorded as Israel Antiquities Authority Archives: British Mandate ATQ Files: C.N. Johns, Field Notes of 'Atlit.

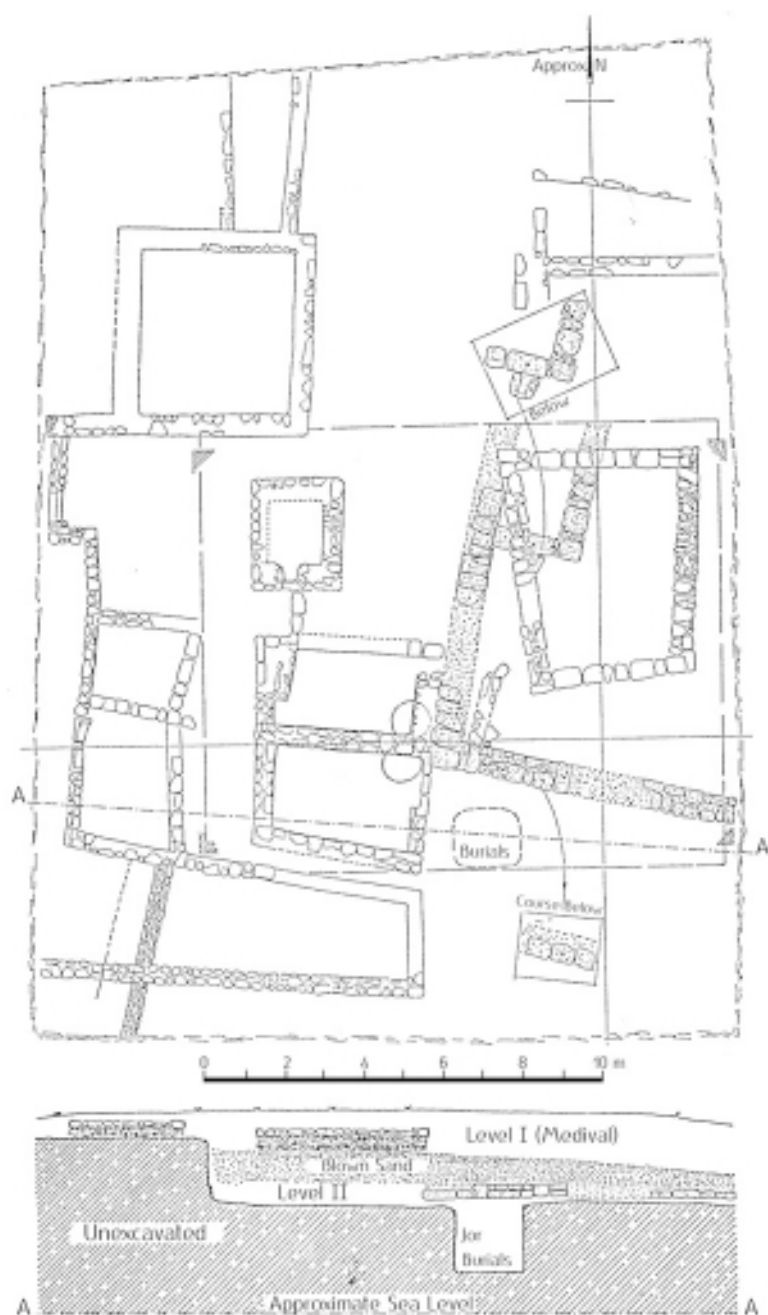


Figure 87. Plan of courtyard houses excavated in faubourg of Chastiau Pelerin (House 5:1) (courtesy of Adam Johns).

jamb. There may possibly have been an additional courtyard house to the west. He presented a plan and describes them as:

...foundations of the medieval houses, built of rough field stones set in mud mortar, difficult to trace and to plan, the thresholds alone being dressed. But in size and in structure the houses do not appear to have been very different from the hovels of a backward Arab village of today.⁴⁶

Johns gives no other description of these remains. The published plan is difficult to interpret, and that of the field diary of 1933 has little additional detail. When I visited the site in July 1994 I could find no trace of this building. If anything survives it is hidden under sand and scrub.⁴⁷

House 5.2

According to Johns this bathhouse in the northern part of the *fau-bourg* was originally a house.⁴⁸ If so, it is very different from the poorly constructed houses just described. Johns noted that the original plan was rectangular, with a long room extending along the south, entered at the east and divided into three compartments, with a large hall and an open, square court or room to the north. He notes that the original roof of the hall was “an intersecting vault of cut-stone in level courses...”, as may also have been the case in the long southern room. The much better construction and design of this building when compared to the houses mentioned above may perhaps point to different social levels in the settlement of the *faubourg*.

6 *Famagusta*

Famagusta benefited by the fall and destruction of Acre in 1291, replacing it in the fourteenth century as a major port and, in the words of Ludolf of Suchem “harbour for the whole sea and the whole kingdom...the richest of all the cities in Cyprus”.⁴⁹ Enlart notes that in the fourteenth century Famagusta was “certainly rich in handsome domestic buildings” but by his time all that remained was “a few foun-

⁴⁶ Johns, 1997 (4), p. 147, Fig. 3.

⁴⁷ Permission to visit this site located within an Israel Defence Forces military base was granted by the IDF Spokesman.

⁴⁸ Johns, 1997 (2), pp. 124–25.

⁴⁹ Ludolf, 1895, p. 41.

dations in good ashlar masonry and a single Renaissance façade...⁵⁰ A few fragments of domestic buildings seen today include a house façade beside a covered street. It has pointed arched doors including a large arch with drip moulding (Figure 15).

7 Jaffa, Japhe, Joppe (Joppa, Yaffo)

The importance of the coastal city of Jaffa (map ref. 1265.1624) declined after the Frankish occupation of Acre in 1104. Its fortunes rose again after the destruction of that city in 1291; but in between Jaffa continued to play an important role, even if not as the principal port of the kingdom for which proximity to Jerusalem was perhaps its only favourable aspect. Otherwise it was too small, too shallow and too rocky to provide a safe and convenient harbour. Most trade to and from the kingdom as well as pilgrim traffic and the harbouring of Crusading fleets was directed to Acre and Tyre. In spite of its shortcomings Jaffa expanded greatly under Frankish rule and became one of a number of Crusader cities that developed a *faubourg* which eventually was enclosed in an outer line of fortifications.⁵¹ Part of the reason for its growth lay in the increase in pilgrim traffic to pilgrimage sites in the city—the Church of St. Peter, associated with the apostle's raising of Tabitha (Acts 9.36–43) and the vision of the unclean food (Acts 10),⁵² the house of Simon the Tanner and the stone on which the body of St. James lay before it was transported to Spain.

A group of houses excavated in 1995 in what is known as the Ganor Compound. This area would have been within the *faubourg* or *burgus novus* to the southeast of the old city.⁵³ It appears to consist of a number of small rectangular rooms of similar dimensions possibly organised around communal courtyards but in an irregular fashion which seems to suggest that these structures were built as individual units. These buildings were only partly preserved. They date to the thirteenth century but some have earlier phases and may date back

⁵⁰ Enlart, 1987, p. 454.

⁵¹ Recent excavations at Jaffa have brought to light the first archaeological evidence for the presence of the *faubourg* and its fortifications.

⁵² Its relics may have included the head of St. George and the body of St. Crestiene. See Pringle, 1993, p. 268.

⁵³ Information on these houses was kindly supplied by M. Peilstöcker of the IAA. The houses described here were located in Area B of the Ganor Compound which is situated on both sides of Rabbi Pinhas St, east of Yefet St.

to the ninth century. They were destroyed at the end of the Crusader period and the area remained unsettled until late in the Ottoman Period. In most cases only the foundation level was found, the stones from the walls having been robbed. The foundations were of small fieldstones (mostly *kurkar*). Where they survived, the upper walls were constructed of well dressed *kurkar* blocks.

House 7:1

Remains of a structure exposed in the western corner of the excavated area. Only one wall and the plastered floor were recovered. The western and possibly the southern walls may be located in the unexcavated area.

House 7:2

This is the southernmost structure in Area B. It consists of a single rectangular room measuring 5.80 by 3.90 m. with a stone pebble floor. In the western corner was a *tabun*. Between this and other buildings are remains of additional walls that either comprised an addition to this house or belonged to an earlier structure, probably the former as the wall and floor levels of these fragments are the same as those of the other houses in this group.

House 7:3

Excavations revealed the western corner of this building and a stone floor. This appears to have consisted of a single rectangular room like most of the other structures.

House 7:4

This structure consist of two rectangular units attach to each other, but as there is no indication of a doorway between the two they may possible have functioned as individual units. The western room was larger (5.50 by 4.50 m.) than the eastern one (5 by 3 m.). The eastern room was the only building in this group for which an entrance could be identified.

House 7:5

This structure was relatively well preserved. It differs from the other buildings by its almost square dimensions measuring 3.50 by 4.80 m. No floors or installations were found in this building.

House 7:6

This structure which measures 6 by 4m. was also found relatively well preserved. In its southern corner a *tabun* was unearthed. This is the only structure in this area where some of the dressed *kurkar* stones of the upper wall levels have survived.

8 *Jerusalem, Hierusalem (al-Quds, Yerushalayim)*

Jerusalem, situated in the Judean mountains at c. 800 m. above sea level, fell to the Crusaders on 15 July 1099 after a five-week siege. In the process the population was slaughtered and the surrounding countryside devastated, but the city itself suffered little destruction. Over the next 88 years the Frankish presence was to make a major impression on the city largely in the form of the construction of churches, markets and other public buildings, much less with regard to domestic construction. Whereas contemporary descriptions and documents discuss public buildings in detail, they give us only a sketchy view of domestic buildings, a subject that clearly held little interest for visitors to the city. The numerous maps of Frankish Jerusalem are of no use at all, as their rendering of the houses is invariably schematic and decorative. Some hints survive in documents, but never in enough detail. The houses that had served the pre-conquest population that was now forced out of the city were occupied by the new settlers. This process is described by Fulcher of Chartres:

After this great slaughter they [the Crusaders] entered the houses of the citizens, seizing whatever they found there. This was done in such a way that whoever first entered a house, whether he was rich or poor, was not challenged by any other Frank. He was to occupy or own the house or palace and whatever he found in it as if it were entirely his own.⁵⁴

The reason so little domestic architecture of Frankish Jerusalem survives is probably not only because the Franks did not need to build new

⁵⁴ Fulcher of Chartres, 1.29.

houses but also in part, due to the substantial destruction of Frankish houses in the period of Ayyubid rule before the city was returned to the Franks in 1229. Sultan al-Kāmil, in defending his decision to return Jerusalem to the Christians, stated that all he had ceded to the Franks was churches and houses in ruins.⁵⁵ An additional reason is that the city was not abandoned and buried (as was the case with the coastal towns) after it fell to the Khawarizmians in 1244. Rather, it survived, and over the next eight hundred years its medieval houses underwent the usual process of deterioration, destruction and reconstruction. The Mamluks built a great number of public buildings, adding considerably to the changing face of the city. With the collapse of Mamluk rule in the late fifteenth and early sixteenth centuries Jerusalem fell into disrepair and, according to the Jewish traveller Obadiah da Bertinoro, was: “for the most part desolate and in ruins.”⁵⁶ This would have entailed also the destruction of surviving Frankish houses. Bertinoro emphasises the condition of the Jewish inhabitants:

The Jews’ street and the houses are very large; some of them dwell also on Zion. At one time they had more houses, but these are now heaps of rubbish and cannot be rebuilt, for the law of the land is that a Jew may not rebuild his ruined house without permission, and the permission often costs more than the whole house is worth.⁵⁷

This process would have had an effect not only on Jewish property, which in any case would have included many former Frankish houses. The outcome was that few traces of medieval domestic buildings remain in Jerusalem, and today we know of no complete house of the twelfth century that has survived.

Pringle refers to charter evidence suggesting the existence of courtyard houses in Jerusalem.⁵⁸ He considers these to have been mainly pre-twelfth century houses, while others built in the twelfth century were of the south-European type. However, there is no evidence to suggest that European types introduced by the Franks entirely replaced Eastern type courtyard houses and, as noted above, in Caesarea there are courtyard houses that are clearly of thirteenth century date. The same is true of courtyard houses in Acre, and it seems probable that

⁵⁵ Gabrieli, 1969, p. 271.

⁵⁶ E.N. Adler, *Jewish Travellers*, London, 1930, p. 234.

⁵⁷ *Ibid.*, p. 236.

⁵⁸ Pringle, 1990–91, p. 110.

Eastern and Western type houses were built in most of the towns and in both centuries of Frankish rule.

Regarding the height of houses in Jerusalem, it would seem that these were occasionally two or three storeys high, as was the case in Acre, and could sometimes even reach four storeys, as we know from a document recording the permit granted by the canons of the Church of the Holy Sepulchre to one Arnulf, son of Bernald, to build a third and fourth floor onto houses built over arches belonging to the canons above the Hospitallers' money exchange.⁵⁹ Theoderich records that the houses of Jerusalem were "lofty piles of carefully wrought stonework...not finished with high-pitched roofs after our fashion but level and flat". He notes that "they had flat roofs and water was caught on these roofs and conveyed to the cistern for none had wells".⁶⁰ In Jerusalem there were merchants' houses with one or more storeys above shops. The canons of the Holy Sepulchre sold the house mentioned above to a Syrian, on condition that if anyone should in the future add another storey and wish to sell it, the canons should have the right of pre-emption at one mark less than the proposed selling price.

Water for domestic purposes in Frankish Jerusalem was mainly from the traditional cisterns described in the eleventh century by Naser-e Khusraw: "...however, in all the houses there are pools for rainwater, wherein each person collects the water from his own roof".⁶¹

Extensive excavation work has taken place in Jerusalem over the years, in particular in the 1970s during the reconstruction of the destroyed Jewish Quarter. Most important with regard to the Frankish period are the excavations carried out by N. Avigad, which exposed among other buildings the Frankish covered market and a twelfth century house on the Street of Mount Zion.

House 8:1

The fragmentary remains of a courtyard house that was excavated on the Ophel hill on the southern side of the Temple Mount, were identified as of Frankish date. The identification was based on the existence of a cross found on one of the voussoirs of its door, a T on another

⁵⁹ *RRH*, no. 223.

⁶⁰ Theoderich, 1891, p. 5; 1994, 3:99–100, p. 146.

⁶¹ Naser-e Khusraw, p. 28.

voussoir (possibly indicating that the house was the property of the Templars), and the fact that the ashlar used in the door frame have diagonal drafting, although, according to the excavators, not as fine as it usually is.⁶² The fact that other than the doorway the rest of the construction is of fieldstones is additional evidence for this being a Frankish building.⁶³ The exposed part of this house consisted of a small section of a paved court preserved beyond the threshold, and a room with a lime and clay floor and some stone pavers.⁶⁴

House 8:2

At the northern end of the Frankish covered market on the Street of Mount Zion and south of its junction with David Street is a house with shops on the ground-floor level. It covers an area of 126 square m. This building was uncovered during the excavation and restoration of the Cardo in the 1970s (Figures 23, 88). The excavation was carried out under the supervision of Nachum Avigad and was briefly described in the publication of the Jewish Quarter excavations.⁶⁵ The surviving part of this structure consists of three narrow barrel vaults measuring 2 by 7 m. each. The present northernmost vault is now used as a small mosque. It is possible that originally the structure extended further to the north. Entrance to each of these vaults is now on the Jewish Quarter Street (the Street of Judas' Arch), but the original entrances were on the market street and these were uncovered, blocked but intact with the façade surviving to a height of 4 m. (11 stone courses). The shops have doors 70 cm. wide and 1.9 m. high. They have flat lintels formed of five voussoirs each, which have a carved, stepped profile and form low arches with pointed ends.⁶⁶ At the meeting point between the lintels and the doorposts are small carved brackets. At 1.2 m. above each arch is a small rectangular opening the height of one stone course. It

⁶² R.A.S. Macalister, J.G. Duncan, "Excavations on the Hill of Ophel, Jerusalem, 1923–1925", *PEF Annual* 1923–5 (1926), p. 134.

⁶³ The construction with ashlar quoins and door and window frames while the walls themselves are of fieldstones is noted above as a Frankish technique imported from the West. See above, p. 48. Here the ashlar is not marginally drafted but, rather, have the Frankish diagonal tooling.

⁶⁴ Macalister and Duncan, 1926, p. 135.

⁶⁵ See Avigad, 1980, p. 248, Fig. 292.

⁶⁶ This unusual design is found occasionally in Frankish architecture—as, for example, in the church at Dair al-Asad, where it appears as a relieving arch over a solid stone lintel. See Pringle, 1993, Plate 47.

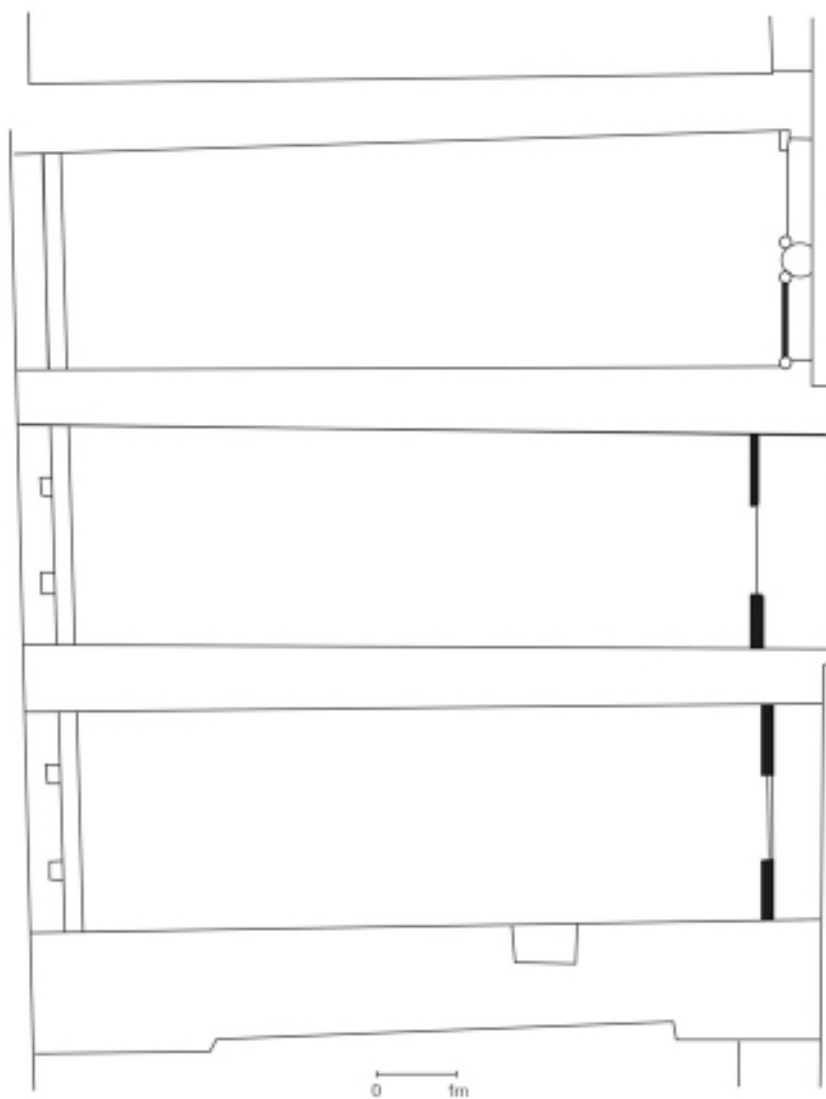


Figure 88. Plan of house with three ground-floor shops in Jerusalem (House 8:2) (drawing by author).

was formed by leaving a small open space between two stones and it was apparently intended to give light to the shop when the door was closed or to a second storey.

Two features of workmanship establish this as a Frankish building: The whole of the façade is constructed of ashlar dressed with diagonal tooling. Second, there are several masons' marks on the façade (four types), and there are no doubt several more in the interior, which is at present inaccessible. A third feature that may or may not be a Frankish technique is the use of false voussoirs created by incision. A similar use of this technique is seen in the twelfth century Frankish building at Aqua Bella.⁶⁷

House 8:3

When it was constructed, the above-mentioned house (8:2) was not built up against the market façade but was some 3.65 m. to its north. The space between it and the market façade was later filled in by the construction of this small house with a single shop front. The shop also appears to have been constructed in the Frankish period although there is a noticeable deterioration in the quality of the masonry. Nonetheless, it retains the general appearance of the adjacent house. Rather than a single door, however, it has a large, shallow-arched shop door and a smaller arched window. Above, at first-floor level there are stone brackets, possibly for a timber balcony.⁶⁸ Although the masonry is comparatively poor the stones still show evidence of diagonal tooling.⁶⁹ There is no doubt that it is later in date than both the market and the house to its north. It is built up against and partly hides a finely drafted attached column with a typically Frankish capital that formed part of the decorated northern façade of the market. It is possible that there was a short street between the market and house 8:2, extending from this point in an easterly direction and joining with the adjacent Street of Judas' Arch which was blocked when this house was constructed.⁷⁰

⁶⁷ For Aqua Bella see Pringle, 1993, p. 245, Plate 175 and Pringle, 1982, Fig. 12.

⁶⁸ Similar corbels can be seen on the façade of the Frankish market in David Street.

⁶⁹ The date of this house could be late twelfth century, or possibly it was built during the brief interlude of Frankish rule in Jerusalem in the thirteenth century.

⁷⁰ However, it may be that the market is earlier and that the area to the north was originally open. D. Bahat suggested to me that perhaps earlier, prior to the construction

House 8:4

In the Armenian Quarter near the small church of St. Thomas on the Street of the Armenian Patriarch is part of what was possibly a domestic building of Frankish construction. It can be identified as Frankish by the masonry on the northwest corner which has marginally drafted stones to the height of several metres. The stones do not appear to be in secondary use.

House 8:5

West of the covered market street (52 Habad Street) are the remains of what appears to be part of a Frankish house; three groin-vaulted bays supported by piers with mouldings and transverse arches contained within later building (Figure 89).

House 8:6

This building which was only summarily examined and which now serves as a clothing factory appears originally to have been a fairly sumptuous dwelling. It consists of two floors, possibly with a basement. It apparently had six groin-vaulted bays on each floor. The piers supporting the vaults have carved brackets and moulding, and there are some finely made embrasure windows in the northern wall.

House 8:7

A partially preserved merchant house with three shops (at least) is located on the south side of Temple Street near its eastern end adjoining the Turba of Barka Khān. The façade of three pointed blocked arches would originally have served as shop openings. Almost nothing survives of the shops beyond the facade. Circular shields with the letter T in the lower half probably signify Templar ownership. Burgoyne noted six of these symbols, four of them around the small window.⁷¹ The masonry has been reworked so that almost nothing can be seen of its original tooling.

of the houses, this area north of the market gate was part of a piazza noted on the maps of Frankish Jerusalem as *forum rerum venalium*.

⁷¹ See above, p. 86.

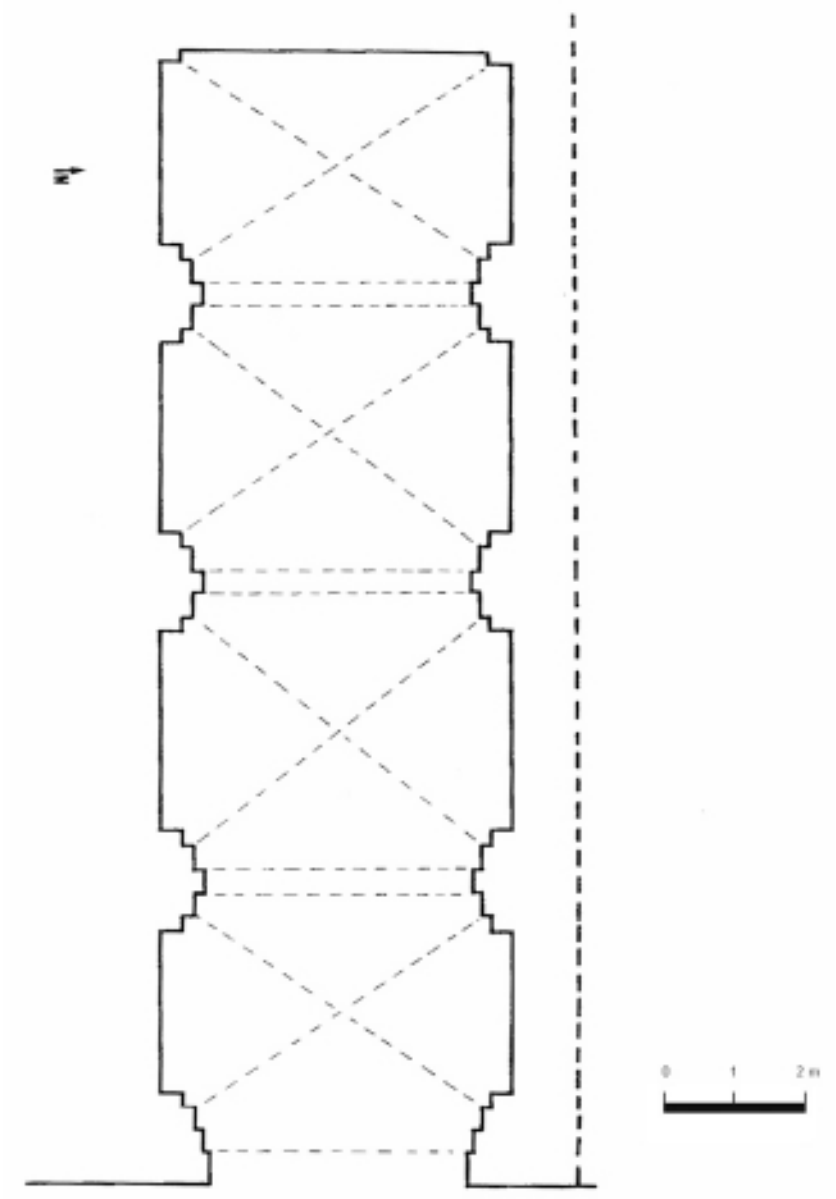


Figure 89. Plan of house in Habad Street, Jerusalem (House 8:5) (drawing by author).

9 *Nicosia*

Nicosia appears to have been the principal town in Cyprus since the late eleventh century.⁷² Its rise was in part due to the movement of population from the coastal towns of Paphos and Salamis. After the occupation of the island by Richard I during the Third Crusade, Nicosia became the seat of the Lusignan kings of Cyprus in 1192. At this time it became known as Nicosia rather than Lefkosia. In 1489 it became a Venetian possession.

There are a number of Frankish houses in Nicosia that date to the period of Frankish rule.⁷³ These all belong to the period after the Frankish loss of the mainland. Other than those mentioned below, Enlart recorded a few houses of somewhat later date and some interesting fragments, such as some very fine Gothic doors with hood moulds and carved finials.

House 9:1

A two-storey house and a low attic with several plain rectangular windows, with a string course of square rosettes between the ground and first floor and two large pointed-arch windows, one on each of two faces, with hood moulds carved with similar square rosettes.

House 9:2

One of the better surviving examples of medieval houses in Nicosia is located at the south-east corner of the cathedral square surrounding St. Sophia. The upper part of the house and the interior have been rebuilt since Enlart described it (Figure 90). It has a hood-mould door and plain bead moulding around the windows. On the first floor the windows have deep sills carried on brackets with Renaissance type volutes carved with grotesque figurines in low relief.

House 9:3

Enlart describes a medieval house located between St. Sophia and the Omerye Mosque as a completely ruined domestic building, only two

⁷² P.W. Edbury, *The Kingdom of Cyprus and the Crusades, 1191–1374*, Cambridge, 1991, p. 13.

⁷³ Enlart, 1987, pp. 402–15.



Figure 90. Frankish house in Nicosia (House 9:2) (photograph by author).

walls remaining, dating to the fourteenth century and having undergone reconstruction in the fifteenth.⁷⁴ It was a rectangular building of two storeys (at least) of which the upper storey was completely destroyed; and only the northern of the two walls, the façade facing the street, was, in Enlart's words, of any interest. Of the original phase a large blocked door survived, with an undecorated pointed arch and tympanum over a decorated monolithic marble lintel carved with three escutcheons. These were the arms of the house owner or of a government official responsible for its construction or of an institution that occupied the house. A second door to its left and at a lower level belongs to the second phase of the fifteenth century. This is a broad hood-mould carved with a slight ogee with a finial of heavy foliage. There are no other features on the façade except for a section of a string course that separated the two floors.

⁷⁴ Enlart, 1987, pp. 407–408, Fig. 355.

B: *Village Houses*10 *Al-Haramiya*

A street village was partly excavated in 1994 beside the road to Nablus, north of Ramallah in a valley known as Wadi Haramiya.⁷⁵ This village has not been identified and may relate to the nearby estate centre at Burj Bardawil. It consist of a group of elongated houses similar in layout to those at al-Kurum, Magna Mahumaria and Parva Mahumaria.

11 *Al-Kurum, Kh. Samwil, Ramot 06*

This is a twelfth century site just southeast of Montjoie (map ref. 1678.1368), probably with a similar history to Parva Mahumaria. It is situated on the southern slopes of the hill at the top of which stand the remains known as Khirbat al-Burj, northwest of Jerusalem. It is perhaps not on the same Roman road that passes via Parva Mahumaria to Damascus Gate, as that road crossed the hill west of Khirbet al-Burj at Bait Iksha, according to the Palestine Exploration Fund map of 1880 (Sheet XVII). However it is possible the PEF map is inaccurate on this point and that the road may have crossed further north via Montjoie before turning south, in which case it could have passed through al-Kurum rather than Bait Iksha (closer to the route of the modern road).

The ruins of the village were noted by the British Survey who described it in 1883 as follows:

Khurbet Samwil (Mt)-Traces of ruins. Walls, caves and a cistern cut in the rock. Immediately south of Khurbet el Burj, forming part of the same site. There is also a large mound, with side walls of dry-stone. It is marked as a tomb on the map, and appears to be a modern Arab grave.⁷⁶

The Survey of the Land of Judah and the Hills of Ephraim describe it this way:

⁷⁵ The site was excavated by Yehiel Zelinger. Publication is in preparation.

⁷⁶ Conder and Kitchener, 1883, p. 125.

Remains on a slope c. 800 m. east of Bait Iksa and c. 300 m. south of Khirbet el Burj (site 150). In the ruins there are remains of buildings, two lime kilns, four cisterns and destroyed burial caves.⁷⁷

Now known as Ramot 06, this is the second village of its type to have been extensively excavated, and its importance is in its strengthening the case that the “street-village” plan found at Parva Mahumaria and Magna Mahumaria is not a unique phenomenon in the countryside around Jerusalem (although perhaps a salient one in the kingdom as a whole). Because, unlike Magna Mahumaria, the ruins of the Frankish village at al-Kurum were not subsequently built upon; it has, like Parva Mahumaria, survived in a fairly good state of preservation. The excavations in the 1990s did not establish the presence of a church and curia, as were found at Parva Mahumaria. The administrative building was, no doubt, the adjacent hall-house of al-Burj. The church, for there surely must have been one, may well have been in the area towards the top of the slope on the eastern side of the road, which was not excavated and where surface remains of walls are still evident.

Al-Kurum is yet to be identified with a specific medieval village, but its similarity to Parva Mahumaria (in almost every feature of planning and construction) suggests that it may in some way be related to that site. It may be a foundation of the Church of the Holy Sepulchre, possibly one of the twenty-one villages granted by Godfrey of Bouillon and confirmed by Baldwin in 1114.⁷⁸ We know the location of most of these villages.⁷⁹ Three sites are yet to be identified: Urniet, Helmule and Beitfutier, and two others have uncertain identifications: Kefredil and Bubil. Our village could possibly be one of these. Another possibility is that it was owned by the Premonstratensian Order which was centred at nearby Montjoie (St. Samuel). Benvenisti notes that the Premonstratensians received from Baldwin II (1118–31) the site of the church as well as the entire tract of land stretching eastward to the Jerusalem—al-Bira road and southward to a point beyond Bait Iksa. He suggests that the monks established a storehouse here (al-Burj).⁸⁰ However, there is no evidence for this and the proximity of al-Burj to Montjoie is not reason enough to identify it as

⁷⁷ M. Kochavi, *Judea Samaria and the Golan Archaeological Survey 1967–1968*, Jerusalem, 1972, p. 187, no. 151.

⁷⁸ Bresc-Bautier, 1984, no. 26; *RRH*, no. 74.

⁷⁹ See Pringle, 1985, Fig. 1.

⁸⁰ Benvenisti, 1970, p. 363.

Premonstratensian property. The lands around Montjoie were not all held by the Premonstratensians. We know, for example, that the Abbey of Notre Dame de Josaphat received a grant of land from one Radulfus Aliensis "...*iuxta Montem Gaudii sitam*".⁸¹ Also, a vineyard beside the cemetery of the Church of Montjoie was purchased by one Guibertus Papasius and his wife, Usanne.⁸²

Although the Frankish name of this village has not yet been established this site has been identified, since medieval times at least, as the site of the birthplace or house of Joseph of Arimathea. Several sources since the fourteenth century mention it in this manner including Ludolf of Suchem (1336), Anonymous of the Rhine II (fifteenth century), Louis of Rochechouart (1461), Fr. Alexander Ariosto (1473), Anonymous of 1480, Nicolas eveque d' Acquirmann (1483), Claes van Duesen (1484–96), Jean Thénau (1512) and Francesco Suriano (1485, 1514, 1524)⁸³ and modern guide books retain these traditions.⁸⁴

The recent names for the site include Khirbat Samwil and al-Kurum. Al-Joz and al-Burj refer to the ruin on the top of the hill but the two sites appear to be interconnected in the fourteenth century sources, and, as mentioned, in the twelfth century the tower and the village were probably related, the former being the administrative centre of the latter. Aside from the five names in the list of 21 villages of the Church of the Holy Sepulchre mentioned above, there are two others that might apply to al-Kurum. Both are, however, identified elsewhere. One is Armotie, which bares some resemblance to Arimathea but has been identified as Khurbet Arnutiya. The weakness of this attempt lies in the unlikelihood that the Franks would have distorted a name from the New Testament. Nonetheless, we know that this name was distorted in

⁸¹ Delaborde, 1880, nos. 6, 8.

⁸² Bresc-Bautier, 1984, no. 121.

⁸³ See Ludolf of Suchem, "Ibi prope est Arimathia civitas, unde ortus est Joseph, que Dominum in sepulchro novo posuit. Non longe ibi est Emaus.", Ludolphus de Sudheim, "De Itinere Terre Sancte", AOL 2 (1885), p. 357; 1895, p. 122; *Vier Rheinische Palaestina—Pilgerschriften* (fifteenth century), pp. 118–19; Louis of Rochechouart, *Journal de Voyage*, ed., C. Couderc, in ROL, 1983, p. 240; Fr. Alexander Ariosto, *Topographia Terrae Promissionis*, ed., P. Marcellino of Civezza, Rome, 1863, p. 31; Anonymous of 1480, *Le Voyage de la Sainte Cité de Hierusalem*, Paris, 1882, pp. 67–69, 98–99; AOL 2, p. 400ff; Claes van Duesen, *Vier Rheinische Palestina—Pilgerschriften* (1484–96), pp. 206–7; Jean Thénau, *Le Voyage d'Outremer*, Paris, 1884, p. 117; Francesco Suriano, *Il trattato di Terra Santa dell'Oriente*, ed., G. Golubovich, Milan, 1900.

⁸⁴ Baedeker, 1898, p. 114; Luke and Garstang, 1929, p. 216 and Matson, 1946, p. 241.

the twelfth century by the Abbot Daniel and by Joannes Phocas, who both identified nearby Nebi Samwil as the city of Armathem which certainly must refer to the same Arimathea.⁸⁵ The other possibility is Aram, which, together with Ramatha, is identified at our site in the fifteenth century. Aram however is generally identified today as ar-Ram and Ramatha with ar-Ram or Ramla.⁸⁶ Ramatha however had to be in the area of Calandria, Bethlegel, Aithara and Hadessa.⁸⁷ Not only ar-Ram, which Pringle⁸⁸ accepts as the identity of Ramatha, but also al-Kurum fits this location. In its favour, at al-Kurum a Frankish village has been found, whereas at ar-Ram, to date there are no known traces of a village but only a manor house. Thus the question of identity remains open. All these names are, however, phonetically very close: Arimathea = Arnutiya = Ramatha = ar-Ram⁸⁹

Houses 11:1–18

These are houses excavated in the southern part of the village (Figure 91). They are all small and narrow, averaging about 4 by 10 m. (internal measurement). In most cases only the ground-floor level survives. In house 11:3 an undercroft was found which was accessed via a staircase from the street.⁹⁰ There is a second staircase on the ground floor, but it is not clear if these were in use at the same time or at what stage either of them went out of use. The undercroft was covered by a barrel vault, and no doubt barrel vaults were used for roofing the ground floor,—possibly also for the upper floors, if these existed. In many of these houses there is a wall towards the back of the house dividing the

⁸⁵ Abbot Daniel, 1888, p. 9; Joannes Phocas, 1889, p. 34. Abbot Daniel connected the name not to Arimathea but suggests that it refers to the fact that the site was fenced (i.e. Armathem = armed).

⁸⁶ Burchard identified Arimathea with Ramla. See Burchard of Mount Sion, p. 78; 1896, p. 86.

⁸⁷ Prawer, 1980, p. 132.

⁸⁸ Pringle, 1983, p. 161.

⁸⁹ It is mere coincidence that the modern Hebrew name—Ramot—follows this pattern.

⁹⁰ Lloyd, 1984, p. 48, describing medieval merchants' houses in England writes: "Medieval merchants' houses, even if built mainly of timber, often had stone-vaulted undercrofts, at basement level, which were used for storage and which sometimes remain when the house above has disappeared or been rebuilt.... At Chester a few such undercrofts survive at ground level and semi-basement level, reached directly from the street."

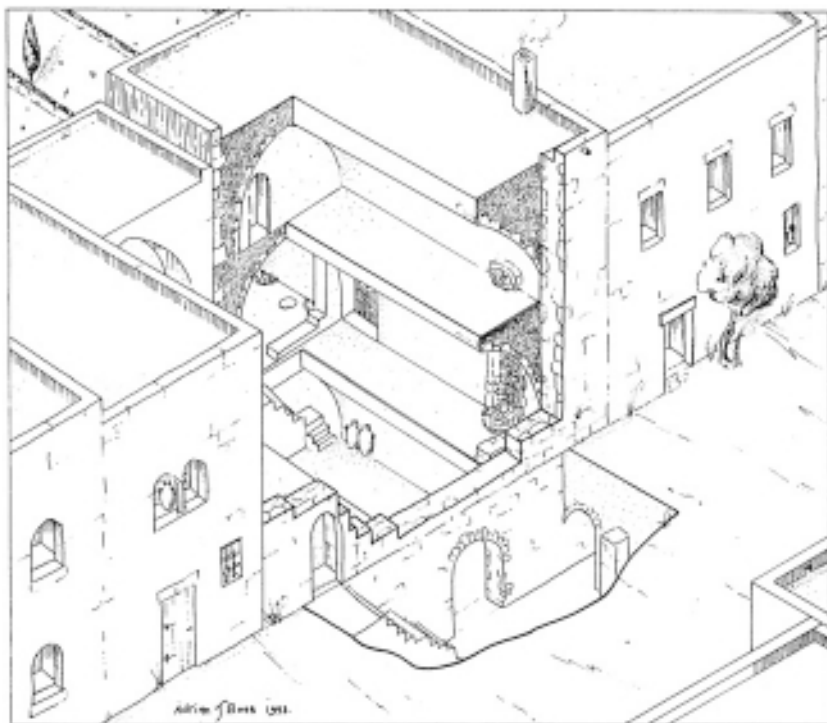


Figure 91. Reconstruction of house in village of al-Kurum (drawing by author).

ground floor into two, the front room facing the street occupying two thirds of the area.

Ashlar masonry (displaying diagonal tooling) was used for only certain elements in these houses: threshold stones, doorjambs, chimneys and occasional features in the walls. Door and window frames would have had such ashlar frames but few of the former and none of the latter survive. Otherwise all masonry was of coarse limestone fieldstones. All the stones appear to be locally quarried. The street walls and the back walls averaged about 90 cm. wide, while the walls between houses which supported the barrel vaults were about 1.10 m. wide. They were constructed of rows of rough fieldstone with stone chips between. In the above-mentioned undercroft, which was partly cut out of the bedrock, the constructed parts of the side walls were constructed completely of stone chips. The walls were held together with mortar and were covered on the interior and perhaps also on the

exterior with lime plaster. Floors on the ground level were constructed directly on the bedrock which was surfaced with a thick white plaster. The two types of threshold stones found at Caesarea are also present here, but in this case they are constructed of local stone, three or more stones making up a single doorway threshold rather than a monolith as is often the case in Caesarea. The two staircases leading down to the cellar in house 11:3 were roughly built with two to three stones forming each step. A staircase is also found outside house 11:15. The general lack of staircases in these houses does not necessarily exclude the existence of upper levels. It is possible that, as in contemporary houses in the West, ladders or wooden staircases were used to reach the upper levels.⁹¹

On the northern wall of the ground floor of house 11:3 is a large recess that may have served as a cupboard. It was created by the addition of a layer of stonework on the wall. In the cellar of this house is a small niche built into the eastern wall at the end of the barrel vault. Similar niches are found in houses 11:7 and 11:9. Most of the houses at al-Kurum have benches built around the walls. These appear also in some of the houses at Parva Mahumaria. At the Frankish farmhouse at La Hadia (Khirbat Uza, east of Acre) there are similar benches. (As noted, there were benches also in southern European houses.) The dimensions of the benches here are c. 50 cm. wide and 30–50 cm. high. They are constructed of fieldstones and mortar and are covered with plaster. In several houses the benches are cut from the bedrock.

There are a number of fireplaces and chimneys in the houses at al-Kurum.²¹⁴ The chimneys are built into the northern walls of the houses. At the base is usually a low semi-circular hearth. In one house (house 11:18) the fireplace survives intact. It is a typical medieval type with an arched opening supported on curved brackets.

Water appears to have been collected from the roofs of houses via storm-water pipes. The pipes themselves have not survived. The water flowed into channels cut into the bedrock in the street and via these channels presumably to rock-cut cisterns in the houses. Outside houses on the eastern side of the road are depressions cut into the bedrock of the street. They are joined by a channel that extended in a westerly direction across the street. A cistern probably fed by pipes was uncovered in house 11:3. It has a broad opening (1 m. in diameter) and

⁹¹ Le Roy Ladurie, 1984, p. 39.

widens out below in a bell shape. Its depth was not determined as it was not cleared. A channel is cut in the rock from the cistern mouth leading down to an installation (possibly a latrine) in the southwest corner of the room. Water entered the cistern from a pipe that connected it with a settling tank. The latrine, if that is indeed what it was, has collapsed. It appears to have been a pit with a stone placed across it to cover part of the opening but leave a narrow open space. From the pit a channel with stone covers led out of the house below a door to the south. The channel cover formed the floor of a doorway opening onto the field behind the house.

Industrial installations occupied much of the space on the ground floor in many of these houses. Several of the houses had grape-treading vats and collecting basins. Stone oil presses were also found. The treading vats were always located next to the door. They are square, averaging 1.1 square m., and are up to one m. deep. They were built of stone, lined with a 3 cm. thick layer of pinkish hydraulic plaster packed with small shards. Stone pipes at the base led to small collecting basins cut into the bedrock (on average c. 60–80 cm. deep and c. 40 cm. wide). A large stone from an oil press was found at the southern part of the street. What appears to be a columbarium was cut in the rock ledge to the north in the part of the village that has not been excavated. It is not possible to date the latter with certainty to the period of the village but it may well have been in use then. It has an unusual design, a horseshoe-shaped ledge cut in the rock, with a series of niches on either side and a hole in the center cutting through the rock-ledge to an opening on its eastern side where the houses were constructed. This apparent connection to the back of one of the Frankish houses points to the likelihood that it belonged to the twelfth century settlement.

On the eastern side of the village some of the burgage plots have survived more or less complete. Here and there the terrace walls dividing them have been reconstructed, but there is no difficulty in tracing the original outlines of these fields. The plots average 8 m. wide and 46 m. long, i.e. 368 square m. This is exactly half of a measure called the faddan 'arabi, which in the mountainous regions measures 734 square m.⁹² Sometimes two houses share a plot that is twice as large (i.e. one faddan). Prawer identified the Frankish "local" carruca as

⁹² Prawer, 1980, p. 159. See also J. Richard, "Agricultural Conditions in the Crusader States", in *Setton* vol. 5, 1985, pp. 254–55.

equal to the faddan.⁹³ Thus the plots behind the houses at al-Kurum measure either one half carruca or one carruca.⁹⁴

12 *Casel Imbert, casale Huberti de Paci (az-Zib, Akhziv)*

Casel Imbert is situated on the northern coast of Israel with a small natural harbour to its south and Nahal Keziv to its north (map ref. 1598.2728). It is well documented for the Frankish period. It was granted to Humbertus de Paci (hence its Frankish name) by Baldwin I after it fell to the Franks in 1104. In the 1140s Casel Imbert returned to the royal domain. In 1187 it fell to Saladin, but returned to Frankish hands in 1191. In 1256 John d'Ibelin, who was granted the estate in 1253, leased the village to the Teutonic Order, and they had full ownership from 1261. It finally fell to the Mamluks in 1271.

Some historians, notably Prawer,⁹⁵ have discussed the colonization enterprise at Casel Imbert, the details of which are fortunately preserved in a document of 1153.⁹⁶ Excavations at this site in 1963–64, carried out by M.W. Prausnitz on behalf of the Israel Department of Antiquities (but not published), exposed some buildings of Frankish origin, notably the complex of vaulted halls by the shore. Benvenisti's short description of the village is sadly the most detailed to date.⁹⁷ It is difficult today to distinguish the Frankish from later construction at Casel Imbert. One building (12.1) however, is beyond doubt of Frankish origin. As to whether it served as a private dwelling or a public building of some kind we are less certain. I will describe it here in spite of these reservations because it does give the overall impression of being a residence, perhaps a palatial one, with fine halls and massively constructed walls.

⁹³ Prawer, 1980, p. 157.

⁹⁴ This is the "local" carruca which was based on the area that could be ploughed by one team of oxen in one day (Prawer, 1980, p. 157). It should be distinguished from the "official" carruca which was basically a unit of taxation based on the area that a team of oxen could plough in one year. It is worth noting that the carruca mentioned in the grants of land given to settlers by the Hospitallers at Bait Govrin was, according to Prawer, two "official" carrucæ, that is, a much larger piece of property (62.5 ha. compared to about 0.37 ha). See Prawer, 1980, pp. 121 and 159.

⁹⁵ Prawer, *ibid.*, pp. 140–42.

⁹⁶ Strehlke, 1975, no. 1; Prawer, 1980, pp. 140–42.

⁹⁷ Benvenisti, 1970, pp. 221–22.

House 12:1

This building survives today on two levels. On the lower level, directly above the shore and with a north-south alignment, are two halls, probably originally connected but now with a space of some 4 m. separating them. They cover an area of c. 380 square m. The southernmost hall is a well-constructed, double groin vault entered from the south via two small arches, the easternmost arch turning at a right angle to the east. Five steps, probably later additions, lead down to the double groin vault, which is supported on massive piers and pilasters. On the eastern wall between the second and third pilaster, and about 1 m. above the present floor level is a staircase that turns to the south and continues up in the thickness of the wall to the upper level (11 steps in all). The present floor level of the vault is clearly well above the original level. This can be clearly seen in the second hall where the windows are only partly exposed above the present floor. Consequently this staircase is high in the wall and must originally have been reached by additional wooden steps. Beneath it is a small niche, perhaps intended to join the wooden steps to the wall. There is a larger niche on the southwest pier (46 cm. deep and 46 cm. wide). After a break of 4 m. there is a broad, barrel-vaulted hall 6.60 m. wide and 12.49 m. long. In the western wall facing the sea are two narrow windows 40 cm. wide, and largely buried below the present level. They originally had grilles, as can be seen by the holes drilled in their sides. Steps leading down to the beach at the end of the barrel vault appear to be modern. The walls are well constructed throughout with *kurkar* ashlar and rubble fill. The upper level, reached via the staircase in the east wall of the first hall is impossible at present to interpret. It has a large pier to the south nearly 5 m. long with a small pier attached to its northern end. Another small pier appears 4.5 m. to the north of it.

13 *Magna Mahumaria (al-Bira)*⁹⁸

Magna Mahumaria is situated 16 km. to the north of Jerusalem on the east side of the Nablus road (map ref. 1706/1459). It was one of the 21 villages granted by Godfrey of Bouillon to the Church of the

⁹⁸ I. Kootwyk, *Itinerarium Hierosolymitanum et Syriacum*, Antwerp, 1619, pp. 331–32; J. Goujon, *Histoire et voyage de Terre Sainte*, Lyons, 1670, pp. 93–94; E. Robinson, *Biblical Researches in Palestine, Mount Sinai and Arabia Petraea: A Journey of*

Holy Sepulchre and confirmed by Baldwin I in 1114.⁹⁹ A *villa nova* was established by the canons of the Holy Sepulchre in the 1120s. By mid-century it had about 30 families to which another 50 new families joined, bringing the population up to about 500.¹⁰⁰ The *feuda* granted by the Holy Sepulchre included plots of land for houses and farming—principally the production of wine, which was the chief product of the settlement. In return the settlers paid tithes and *terraticum* (a land tax paid in shares of the crop to the church). In 1187 Magna Mahumaria fell to Saladin and was partially destroyed.¹⁰¹ It was apparently not resettled by the Franks.

Houses 13:1–8

Although few of the medieval houses survive it is clear that this settlement was of the same design as Parva Mahumaria and al-Kurum. On the basis of some houses that until recently could still be seen and a map of the town from the period of the British Mandate, Pringle has drawn up a plan of Magna Mahumaria showing some of the surviving houses along the main road as well as the church and the *curia*. He has also indicated the area behind the houses that would have included the crofts although these can no longer be seen at the site. However, aerial photographs of the village taken by German aviators in 1918 appear to support Pringle's plan and possibly give evidence that it extended even further to the north and south.¹⁰² A close examination of these photographs shows that in 1918 there was a row of narrow plots on either side of a road just to the south of the built-up area, which appear to continue the line of al-Bira's main street. Similarly, the layout of the fields to the north suggests that the village may have extended further

Travels in the Year 1838, vol. 2, 1841, pp. 130–33; vol. 3, p. 76; F. de Saulcy, *Voyage autour de la Mer Morte et dans les Terres Bibliques exécuté de décembre 1850 à avril 1851*, vol. 1, 1853, p. 108; T. Tobler, *Topographie von Jerusalem und seiner Umgebung*, vol. 2, 1853, pp. 494–501; V. Guérin, *Description géographique, historique et archéologique de la Palestine*: Judée, 1868, vol. 1, vol. 3, pp. 7–13; SWP vol. 3, pp. 8–9; Abel, 1926, p. 272–283; *Géographie de la Palestine*, vol. 2, 1967, p. 263; Bagatti, 1979, pp. 20–24; Fig. 5; pi. 4:1–2; Benvenisti, 1970, pp. 223–4; Prawer, 1980, pp. 126–35; Pringle, 1984, pp. 147–68.

⁹⁹ *Bresc-Bautier*, 1984, no. 26; *RRH*, 16–17, no. 74.

¹⁰⁰ Prawer, 1980, p. 127.

¹⁰¹ Abū Shāmā, *RHC (Or)* vol. 4, p. 303.

¹⁰² This was pointed out to me by B.Z. Kedar on aerial photographs from the collection of the Military Archives in Munich.

in that direction as well. South of the town is a system of pools fed from a spring.

Robinson described the houses of al-Bira as "low and many of them half underground."¹⁰³ Pringle describes them as barrel-vaulted structures, set usually end-on to the street.¹⁰⁴ One house of this type, containing an olive press, was recorded opposite the church in 1938 but has since been destroyed.¹⁰⁵ Three barrel-vaulted houses were also recorded in 1946, built against the outer face of the south wall of the castle (khan) or curia.¹⁰⁶ Two of these were intact except for their western walls, which had been partially rebuilt. The third vault was half destroyed. All three are comparatively large, measuring internally c. 29 m. long by 5.5 m. wide, larger than those of Parva Mahumaria which measured only c. 15 by 5–6 m. and the comparatively tiny houses at al-Kurum which measured a mere c. 4 by 10 m. The walls are sometimes nearly 2 m. thick. The interior face of the side walls was built of brick-size stones up to the springing of the vault, above which the upper walls and ceiling were covered with a thick plaster. The vaults were constructed of rubble and mud mortar. The end walls were constructed of larger fieldstones. The central vault had a small round opening about 1.3 m. from its northern end. This vault may have been converted into a cistern at some stage. The walls of these rooms were constructed of small fieldstones. The floors were paved with small, roughly cut cobbles. One of the rooms had two small entrances—one in the north, the other in the east.

Clearance prior to reconstruction on the roof of one of the vaults revealed the remains of two rooms at first-floor level. This is an indication that similar houses in the other street villages also had upper storeys. This would explain the lack of space in the houses at Parva Mahumaria and al-Kurum. The ground floors of these houses was almost entirely taken up by storage and installations for the processing of agricultural produce. Upper floors would therefore have been necessary for living quarters.

¹⁰³ E. Robinson, *Biblical Researches in Palestine, Mount Sinai and Arabian Petraea*, London, 1841, p. 130.

¹⁰⁴ Pringle, 1985, p. 149.

¹⁰⁵ See letter of the Palestine Antiquities Department inspector of 8 July 1938 in the Ramallah-Bireh file of the IAA Archives, Rockefeller Museum, Jerusalem.

¹⁰⁶ S.A.S. Husseini describes these buildings in two reports in 1946 and 1947. See PAM 38.

14 *Parva Mahumaria (al-Qubaiba)*¹⁰⁷

Parva Mahumaria is situated on the western slope of a valley about 12 km. northwest of Jerusalem on the Roman road from Abu Ghosh (map ref. 1629.1386). The Arabic name al-Qubaiba was translated by the Franks into the Latin Parva Mahumaria (little dome). It was one of the Frankish settlements established by the Church of the Holy Sepulchre. A document of 1169 listing the privileges given by King Amaury to the canons of the Holy Sepulchre mentions:

...Magnam Mahomariam et Parvam et Bethsuri, et alias omnes, quas edificaturi estis, ubi Latini habitabunt, cum ecclesiis et omni integritate iusticie et iuris parrochialis...¹⁰⁸

Parva Mahumaria was founded in the third decade of the twelfth century¹⁰⁹ and survived until 1187. It was returned to Frankish ownership in 1241 under the terms of the treaty negotiated with the Ayyubids by Richard of Cornwall, which gave the Franks control over the area between Bait Hanina and Toron des Chevaliers (Latrun). They were expelled from the region in 1244. It is unlikely that in this brief period the Frankish settlers actually resettled the town.

Houses 14:1–115

The houses that were excavated by the Franciscans under the direction of Bagatti were built in single rows on either side of the street (Figure 27). They excavated 29 ground-floor rooms on either side of the street (which was part of the Roman road to Jerusalem).¹¹⁰ There were several more houses and fragmentary remains of the village that remained unexcavated.¹¹¹ The houses were built in a single effort as can be seen in the many instances where walls are shared by a number of houses. The houses vary in size, averaging about 5–6 by 15 m. (internal measurement), as noted, considerably larger than those of al-Kurum but smaller than some of the houses at Magna Mahumaria. Although he noted the existence of internal divisions and that some houses com-

¹⁰⁷ Bagatti, 1993; L.H. Vincent, "Les monuments de Qoubeibeh", *RB* 40 (1941), pp. 57–91; Benvenisti, 1970, pp. 224–227; Pringle, 1985; Pringle, 1992; Pringle, 1993, pp. 239–249.

¹⁰⁸ Bresc-Bautier, 1984, no. 150.

¹⁰⁹ Benvenisti, 1970, p. 225.

¹¹⁰ Bagatti, 1993, p. 88.

¹¹¹ Bagatti gives 115 rooms or remnants on his plan (*Ibid.*, endleaf).

municated with a neighbour, Bagatti referred to these houses as “simple, independent, rectangular rooms”.¹¹² He did not believe they had second floors because of the lack of staircases (he noted the existence of a staircase in one house but thought it was merely for reaching the terrace).¹¹³ However, this need not be the case.¹¹⁴ A wooden staircase or ladder could certainly have been used to reach the upper floor; in simple dwellings in Europe this was not unusual.¹¹⁵ In al-Kurum there is the same lack of staircases except for one possibly in house 11:5 and the staircases in houses 11:3 (which led down into an undercroft). As noted above there is evidence for the existence of a second floor in similar houses at Magna Mahumaria.¹¹⁶ Using a ladder that could be pulled up after ascent adds a certain element of security, even if a very minor one, something that is generally lacking in these villages.

The side walls average about 2 m. thick and were constructed of two stone faces with a core of *debesh*. They were covered with white granulose plaster. Ashlars (with diagonal tooling) appear to have been used only at the corners and doorways. Floor paving of white lime is found in only two houses. The houses would have been roofed with pointed barrel vaults.¹¹⁷ In house 14:3, together with what Bagatti calls blind windows, there were a number of small niches (putlog holes) at the level of the springing of the vault.¹¹⁸

In house 14:23 is an oven with an arched dome built into the wall in the south-east corner. It was plastered with pinkish plaster contains small shards similar to those in the plaster of the wine basins. In 11 of the rooms are rectangular vats with small circular collecting basins below them, connected via a pipe. These are similar to examples found in the houses at al-Kurum. The bottoms of the basins were concave to enable the removal of the wine collected there. The vats are covered with thick, hard hydraulic plaster prepared with crushed shards. Similar basins were found until recent times, and one in use in the

¹¹² Ibid.

¹¹³ Ibid.

¹¹⁴ Pringle, 1985, p. 168, n. 71.

¹¹⁵ Braun, 1962, p. 34; P. Contamine, “The Use of Private Space”, in Duby, 1988, p. 458.

¹¹⁶ Above, p. 258.

¹¹⁷ Benvenisti says the vaults were cross-vaults (1970, p. 226). This is certainly an error. There are no corner piers and the walls are appropriately thick to support barrel-vaults and surviving houses in other villages (al-Bira and Wadi Haramiya) have pointed barrel vaults.

¹¹⁸ Bagatti, 1993, p. 91.

late nineteenth century is illustrated by H.A. Harper.¹¹⁹ They no doubt served for treading grapes, although Bagatti suggested they may have been used for conserving olive oil.¹²⁰ A number of oil and wine press stones were also found.

A very large cistern was cut in the bedrock in the back room of house 14:15. The roofing of this cistern was constructed of masonry, which has fallen in. The interior was lined with hydraulic plaster. There is a vat to the north behind this room that may possibly have served as a settling tank. The coins found in the rooms at Parva Mahumaria date to the second half of the twelfth century and first half of the thirteenth century.

15 *Saint Jorge Labane, Saint Jorge de la Baene (al-Ba'ina)*

This village is situated at the top of a hill and on the north side of Bet Kerem valley (map reference: 1756.2595). The lordship of Saint George was held in the twelfth century by one Henry of Milly and later by his three daughters, St. Jorge de la Baene itself passing to the eldest or perhaps divided among the three. In 1179 Joscelin II of Courtenay received stewardship and later complete control of the lordship. In 1187 it fell to the Ayyubids but eventually returned to the family of Henry of Milly. In the thirteenth century it came into the hands of the Order of the Teutonic Knights until 1271, when the Muslims gained control of the village and destroyed it when the Franks attacked.

House 15:1-2

Bagatti noted two houses in the village that had medieval pointed-arch doorways.¹²¹ I visited these vaults in January 1994 but was unable to take measurements at the time. One of the double-arched doorways has a slit machicolation (Figure 92). To its left is a small door (late?) with a narrow light slit above it. The second vault has a fine double-arched entrance which apparently was originally a window, in the upper part of the vault (Figure 93). This small barrel vault is at present largely filled with refuse. There is a second window on the

¹¹⁹ C. Geikie, *The Holy Land and the Bible*, London, 1891, p. 288.

¹²⁰ Bagatti, 1993, p. 90.

¹²¹ Bagatti, 1971, p. 187. See also Benvenisti, 1970, p. 19; Ellenblum, 1998, pp. 166–69, 171; Pringle, 1997, pp. 24–25.

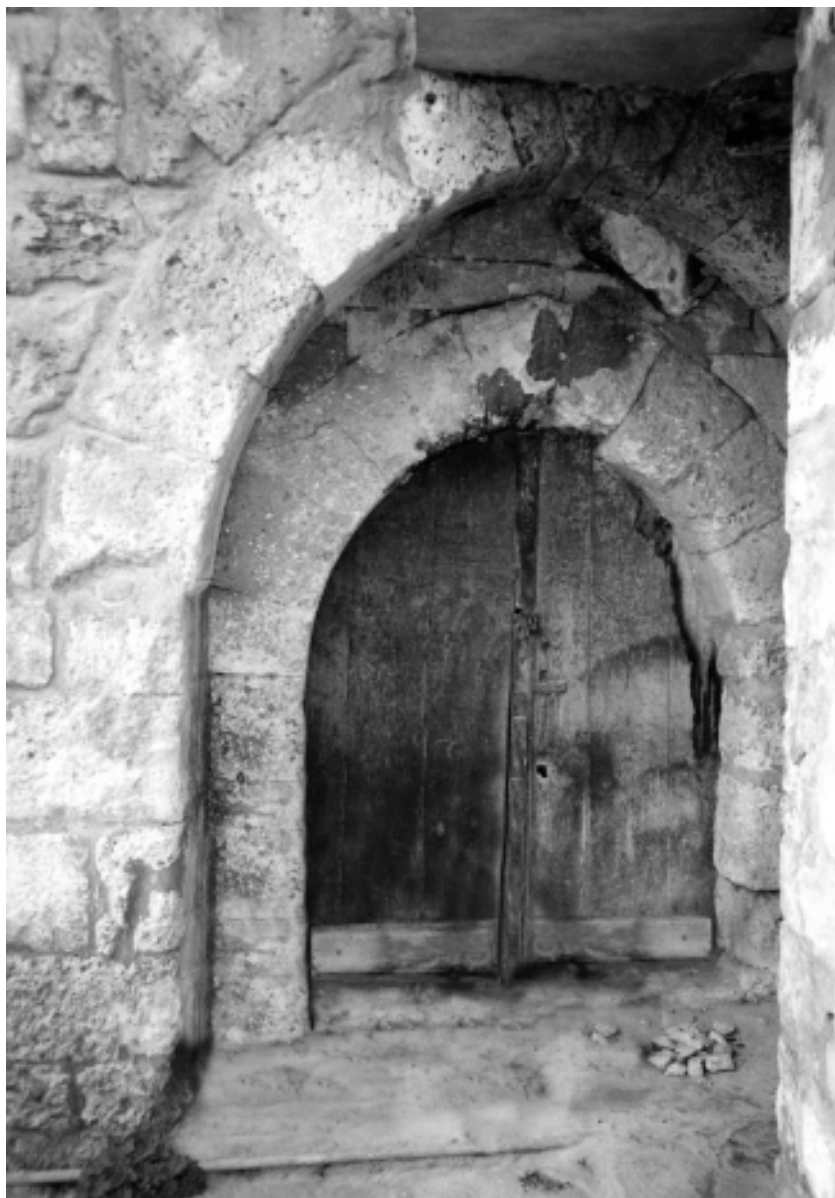


Figure 92. Fortified door of house in village of Saint Jorge Labane (al-Ba'ina) (House 15:1) (photograph by author).



Figure 93. Door of second house in Saint Jorge Labane, (al-Ba'ina)
(House 15:2) (photograph by author).

wall opposite. The external masonry mostly consists of large marginally drafted ashlar.

C: *Manor Houses and Farms*

16 *La Hadia (al-Ghayadah, Horvat Uza)*¹²²

This site is c. 7.5 km. east of Acre on the road to Kfar Yasif (map ref. 1648.2576). The village here is mentioned in a document of 1178 as belonging to Galterius Seagius and in a second document of 1255 as held in tenure by one Rolandus Antelmus.¹²³ Only a small section of what appears to have been a Frankish farmstead was excavated in 1991. The solidly constructed foundations, floors and the bases of walls survive from what was apparently the northern wing of a courtyard building. There were benches along some of the walls. The construction is of rough ashlar, fieldstones and chips with a *debesh* fill. Diagonally

¹²² Visited 27.10.93. See N. Getzov, *ESI* 13 (1993), pp. 19–21.

¹²³ Delaville Le Roulx (ed.), «Inventaire de pièces de Terre Sainte de l'Ordre de Hospital», *ROL*, 3, 1895, no. 125; *Cart. gén. Hosp.*, no. 2714.

dressed ashlar were employed for some of the architectural features. The area before what appears to have been the principal doorway is paved with a thin layer of lime.

17 *Aqua Bella (Khirbat 'Iqbala, 'Ain Hemed)*¹²⁴

A twelfth century site situated off the Jaffa-Jerusalem road at the bottom of a valley below the 'Ain Hemed spring (map ref. 1621.1337). Pringle suggests that it was built between c. 1140 and 1160.¹²⁵ It was probably abandoned c. 1187 and most likely was not in Frankish hands in the thirteenth century. It is recorded only once in contemporary documents.¹²⁶ This is a courtyard building measuring 27 by 36 m. (972 square m.). It is remarkably well preserved for a large part, including the second storey. It has a square courtyard entered from the east, with barrel-vaulted halls on three sides (north, west and south). On the second-floor level are barrel vaults to the north and west, and a long hall with three groin-vaulted bays and an apse (chapel) to the east (Figure 33). Stairs lead up from the south wall of the courtyard to the chapel and to an external gallery on the west. Also on the west was a gate with a cistern and to the south a turret-chamber. At the northwest corner was a tower. Pringle notes that the corner tower was visible from the Hospitaller castle of Belmont (Suba/Zova), and the possibility that it was intended as a signaling position is therefore quite plausible.¹²⁷

Construction is of rough, squared blocks of local limestone, with the door thresholds, jambs and lintels, windows, quoins, stairs and other details constructed of a softer stone that appears to have been brought from farther afield. These stones are rendered with diagonal

¹²⁴ Guérin, 1868, pp. 278–79; Conder and Kitchener, 1881, pp. 114–15; C. Enlart, 1928, pp. 103–106, p. 78; Riley-Smith, *The Knights of the Hospital of St. John in Jerusalem and Cyprus*, London, 1967, p. 320, p. 429; Benvenisti, 1970, pp. 241–45; E. Hoade, *Guide to the Holy Land*, Jerusalem, 1978, pp. 601–602; Pringle, 1992, pp. 147–67; Pringle, 1993, pp. 239–50.

¹²⁵ Pringle, 1993, p. 250.

¹²⁶ See *Cart. gén. Hosp.*, no. 309; *RRH*, no. 458.

¹²⁷ Pringle, 1992, p. 162. In this connection it is interesting to note a curiosity recorded in *PEQ* (1874), p. 77 by C.F. Tyrwhitt Drake in 1874: "Lieutenant Conder made a plan of the crusading ruin of Khirbet Ikbala, south-east of Kariyet el'Anab and about a quarter of a mile south of the bridge on the high road. This is said by the natives to have been Dayr el Benat, a nunnery, where dwelt the Bint Sultan el Fensh—the daughter of the Phoenician king. Since the telegraph has been laid along the highway they have made an addition to the story, and say that she communicated with her father, whose summer quarters were at Soba, by means of a wire."

dressing and have numerous masons' marks. The stones are held with white mortar containing charcoal fragments and occasionally pieces of crushed pottery. The surface on the interior and possibly the exterior was covered with plaster of which some survives, particularly in protected places such as the inset at the western door. The underlying mortar was impressed in herringbone pattern to receive the plaster. Pringle noted that this is a feature found on other Frankish buildings such as the Red Tower, the Benedictine convent in Bethany and the castle of Maldoim on the road to Jericho.¹²⁸ It can also be seen in the Frankish houses excavated by A. Negev in Caesarea and also those excavated by the Joint Expedition in Caesarea (Area TP8). The inner core of the walls is filled with rubble and reddish-orange mortar. On the south side of the courtyard is a staircase giving access to the first floor. The staircase is supported on a half arch under which is a door entering the south range of the ground floor. The steps are built of single stone blocks. The water of the 'Ain Hemed spring served the building as well as irrigating the surrounding farmlands. A drainage channel cut in the bedrock took water out of the courtyard via the main gate. This building has been variously interpreted as a nunnery, a manor-house or farm and a monastic infirmary of the Hospitallers.¹²⁹

18 *Aram, Rama, Ramatha, Ramathes (ar-Ram)*¹³⁰

The village of Aram¹³¹ is situated on a hill 8 km. north of Jerusalem (map ref. 1721.1402). It has been suggested that this is the site of biblical Ramah.¹³² Possibly there was here a small village of Syrian Christians.¹³³ By 1160 the canons of the Church of the Holy Sepulchre had set up a new town (*nova villa*) similar to that at Magna Mahumaria, with rent-free burgage plots and 1–2 carrucates of land for crop growing distributed to the settlers, who had to pay in return a portion of their crop (a quarter of the corn and vegetable crop and a fifth of their olive and grape harvest) to the church each year.¹³⁴

¹²⁸ Pringle, 1986, p. 104.

¹²⁹ Pringle, 1993, p. 250.

¹³⁰ Pringle, 1997, p. 88.

¹³¹ This site has been identified as medieval Aram, Rama or Ramathes although these names have been applied elsewhere, Ramathes to Ramleh for example.

¹³² F.M. Abel, *Géographie de la Palestine*, vol. 2, Paris, 1933, p. 427.

¹³³ Bresc-Bautier, 1984, nos. 36, 43.

¹³⁴ *Ibid.*, no. 126; Also see Prawer, 1980, p. 122; Pringle, 1983, p. 161.

The courtyard building here is a rectangular range of barrel vaults with a tower on the southwest corner that, according to Pringle, was the earliest medieval feature on the site.¹³⁵ He has described the complex in some detail. The tower measures 12.76 m. (e) / 12.65 m. (w) by 14.2 m. (n) / 14.35 m. (s), and its walls are 2.11–2.72 m. thick. The ground level has a slightly pointed, barrel vault aligned east-west. Construction, as throughout the entire complex, is with ashlar, many in secondary use with a rubble and mortar fill. Putlog holes on the north and south interior walls show the use of timber framing in construction of the vault. A pointed, barrel-vaulted doorway is on the east facing the courtyard (1.4 m. wide). Stairs to the right of this door as one enters (88 cm. wide), against the east wall and then through the thickness of the south wall, lead up to the first floor level. They are roofed by a pointed vault, and at a landing in the wall light enters via a splayed window (84 cm. wide). A second, pointed-arch door from the tower to the vault range to its north is 1.86 m. wide and has a passage 2.9 m. wide. It is on a lower level than the other door, which may originally have been reached via a raised landing. The vault to the north, the western range of the complex, is 25.7 m. long and 11.9 m. wide. The east wall is 1.89 m. thick. The vault has collapsed. About half-way along on the east side is a pointed-arch door 1.20 m. wide with a passageway 1.38 m. wide and 1.70 m. long. The northern vault is about 58 m. long and 11.14 m. wide (6.9 m. internally). The northern wall of the vault was constructed prior to the vault itself and is one with the northern wall of the west vault and the eastern wall of the east vault. It would appear that the outer walls of all the ranges were constructed prior to construction of the vaults. Vaults would then have been constructed in this order: B, C, D, E and F. The vault is constructed with radially laid flattish stones and mortar. There are putlog holes and a rectangular air vent in the crown of the vault. Near the western end of the northern wall is a pointed-arch recess (1.43 m. wide, 1.47 m. deep). This may have served as a cupboard. To its right and in the wall opposite are windows. The one in the north wall is 51 cm. wide within, narrowing to 30 cm. or less to the north. That in the south wall is 42 cm. wide. They both have horizontal lintels. To the east of the south wall is another window passing through to the east range. There are also two doors in the south wall. The western door is about 1.80 m.

¹³⁵ Pringle, 1983, p. 165.

wide narrowing to 1.25 m. The eastern door is 1.60 m. wide and has a pointed-arch vaulted passage.

The eastern vault range is 30 m. long and about 11 m. wide (about 7 m. wide internally). It has two doors and three windows in its western wall. The one to the south is 1.91 m. wide with a passage 2.07 m. wide. The door to the north on the west wall is of uncertain width. The northernmost window is 80 cm. wide. Of those to the south the southernmost is 85 cm. and that to its north 64 cm. narrowing to 30 cm. wide.

A small, half-vaulted range runs north-south between the eastern and southern ranges. It partly obscures the two southern windows of the eastern vault and is obviously of later date as is the vault range on the south which abuts it. Internally it is 2.95–2.99 m. wide. At its northern end is a barrel vault 1.99 m. long. The southern range was c. 8.9 m. wide internally and possibly about 25 m. long or longer, perhaps originally extending further west to the south of the tower.¹³⁶ Half way along the northern wall of this vault is a door c. 2 m. wide. At the west end of the wall is an arched doorway 2.33 m. wide.

West of the tower is what appears to have been an outer range dating to somewhat later than the rest of the complex, and at the north west corner are remains of what may have been another, later tower. The courtyard covers an area of 25 by 30 m.

19 *Beitiumen, Urniet (Baituniya)*¹³⁷

Beitiumen or Urniet was situated c. 4 km. southwest of Ramallah (map ref. 1662.1436). It was the property of the Church of the Holy Sepulchre, and was listed in the Cartulary of the Holy Sepulchre.¹³⁸ A series of medieval vaults here is known as al-Badd. According to a short report (*PAM* 33), there was a large medieval building near the middle of the village; many houses have been built into and above it. On the west of the building at its northern end is an intact arch with bossed voussoirs. Part of the east side of the building can be seen from the roof of neighbouring houses.

¹³⁶ Ibid., p. 167.

¹³⁷ Pringle, 1997, p. 29.

¹³⁸ Bresc-Bautier, 1984, nos. 26, 45, 135.

20 *Bethaatap (Bait Itab)*¹³⁹

The ruins of Frankish Bethaatap are situated on a hilltop in an abandoned Arab village 17 km. west-southwest of Jerusalem (map ref. 1551.1268). This was one of the five villages sold by John Gothman to the Church of the Holy Sepulchre in 1161. Pringle describes this as a complex of vaulted Crusader buildings in a deserted Arab hilltop village 17 km. west-southwest of Jerusalem and 2 km. north of the Roman road to Bethgibelin.¹⁴⁰ He notes two construction phases. The earliest phase consists of a first-floor hall-house measuring 13.3 by 29 m. (385.7 square m.) of which only the lower walls and springing of the barrel-vaulted undercroft remain. There is an arched doorway 1.39 m. wide in the middle of the south wall. It was defended by a slit-machicolation and by a single-leaf door. To the left of the door passage a stair covered with a pointed barrel vault led up inside the wall to the first floor. In a later phase, the hall-house became part of the north range of a courtyard building (40/45.7 m. east-west by 59 m. north-south), with four vaulted ranges built around a central court, probably with an entrance on the south. A stone staircase built in the north-west angle of the courtyard gave access to the hall. This phase is similar to the courtyard building at ar-Ram, which differs only in incorporating an earlier tower rather than a hall-house.

21 *Bethsaphace (Bait Safafa)*¹⁴¹

Situated at the southern extremity of modern Jerusalem, north of the suburb of Gilo (map ref. 1690.1281), Bethsaphace is mentioned in a grant of 1110 (confirmed in 1154) together with the village of Montana (or Moitana). Baldwin I granted both villages to the Hospitallers.¹⁴² According to the PAM 32 report in 1941, this is a two-storied building (al-Burj) with an arched entrance. The ground floor is vaulted with a jamalon vault (slightly pointed) the northern part of which has collapsed. The entrance was on the north with a fine arch, preserved but with badly weathered voussoirs. The upper vault is well preserved. The construction of the vaults was of thin stones placed like wedges

¹³⁹ Visit with D. Wiess on July 13, 1993.

¹⁴⁰ Pringle, 1991b, pp. 87–88.

¹⁴¹ PAM 32; Benvenisti, 1970, pp. 233.

¹⁴² RRH, 12, nos. 57, 74, 293.

between the mortar. On the ground floor are two columns and two cisterns.

22 *Burj Bardawil*¹⁴³

This site is 22 km. north of Jerusalem on the road to Nablus (map ref. 1730.1548). It was identified in the past as a road fort, the Survey of Western Palestine referring to it as “a fortress on a steep hill commanding the pass of ‘Ain el-Haramiyeh on the south”. Benvenisti classified it as a manor house or farm used for civilian and agricultural purposes.¹⁴⁴ He stated that there were no apparent fortifications. However, as Pringle notes, there were two building phases: the first stage was a rectangular fort or castle with solid rectangular turrets; the second stage around the courtyard displayed no fortifications.¹⁴⁵ The building in its second phase, was certainly not a fortress. It was 8,100 square m. with additional vaults to the east and north forming an irregular polygon courtyard. A pointed barrel vault is partly preserved on the south side of the courtyard to a height of 4 m. According to Pringle the first phase was a rectangular fort measuring 44 m. (e-w) and probably the same n-s.¹⁴⁶ It had solid rectangular turrets, c. 4 m. wide, projecting 1.95 m. from the corners and from mid-way along three sides. On the inner face of the walls were barrel vaults, and in the centre an open courtyard. He noted the likelihood that these vaults supported an upper storey.¹⁴⁷ A garderobe chute in the eastern corner-turret is evidence of this. Situated to the northeast is the second phase of the complex consisting of a sequence of barrel vaults forming a fan-shaped enclosure. This part of the structure is unfortified. The largest vault, known as al-Baubariya, is 41 m. long and internally 6.9 m. wide. The side walls are 3 m. thick. The vaults below, enclosing the courtyard, are 6.2 5 m. wide (internally) with walls 2.4 m. thick. Between the southern end of this vault and the possible eastern end of al-Baubariya are the remains of a gate 2.5 m. wide. Construction throughout is of roughly worked limestone blocks, and some vaults have marginal drafting on the quoins. The lime mortar was smoothed

¹⁴³ Pringle 1997, p. 43.

¹⁴⁴ Benvenisti, 1970, pp. 237–38.

¹⁴⁵ Pringle, 1991b, p. 88.

¹⁴⁶ The description given here is based on Pringle, 1994, pp. 30–59.

¹⁴⁷ Ibid., p. 38.

and impressed with a trowel in a fish-scale pattern.¹⁴⁸ The interior walls were plastered.

23 *Castellare Rogerii Longobardi (Umm Khalid)*¹⁴⁹

This site has all but disappeared in the expansion of the coastal town of Nathanya in which it is situated (map ref. 1375.1929). This appears to have originally been a courtyard complex, but only the south range survived into the present century. Very little of it can be seen today. Pringle described it as a rectangular complex some 33 m. or more square, with vaulted ranges of buildings set about a central open courtyard.¹⁵⁰ As described in 1881,¹⁵¹ the slightly pointed barrel vault constructed of soft *kurkar* and hard brownish mortar was 22.2 m. long by 6.7 m. wide and the walls were 1.52 m. thick (or 1.64 m.). It had two square manholes about 12 m. apart. On the southern, outer wall was a door (1.7 m. wide but blocked) and there was a loophole (46 cm. wide) with a second (blocked) loophole on the northern wall. The northern wall had a stone ring, perhaps for a horse or mule, suggesting that it is an inner wall. On the south-east corner was a small square tower (6.40 by 6.4 m.), with an entrance or alcove on the south side and two loopholes above it. Pringle considered this to be probably the southern end of the east-vaulted range.¹⁵² There were remains of a second storey and stairs to the west, but apparently these were a nineteenth century addition.¹⁵³ There were two additional blocked doors on the northern wall and a vaulted alcove on its outer face.¹⁵⁴

¹⁴⁸ Pringle notes the use of this technique in several other twelfth century Frankish buildings. *Ibid.*, p. 35.

¹⁴⁹ Pringle 1997, pp. 104–5.

¹⁵⁰ Pringle, 1986, p. 18. The use of the term “castle” here, so often used to denote any fortified building in the Crusader kingdom, should not be taken as a reference to the function of these buildings; elsewhere Pringle notes that this courtyard buildings might legitimately fall into the category of manor houses as the Latin name, “Castle of Roger the Lombard”, suggests that it was the dwelling of a noble lord. Pringle, 1992, p. 148.

¹⁵¹ Conder and Kitchener, 1881 pp. 142–43.

¹⁵² Pringle, 1986, p. 75.

¹⁵³ *Ibid.*

¹⁵⁴ *Ibid.*

24 *Clepsta (Lifta)*

A Frankish structure in the lower part of this village, below the spring Mei-Neftoah, to the northwest of the Old City of Jerusalem (map ref. 1686.1338), was described by Benvenisti as a manor house.¹⁵⁵ It was a rectangular building measuring c. 15.2 by 18.6 m., constructed of massive ashlar with border margins and pronounced rough bosses on the lower courses, as can be seen from the southern face of the southwest corner, which is the lowest area exposed at present. The upper courses are of coarse fieldstones with chip and mortar fills, and the corners (at least the northwest and southeast corners which can be observed, the rest being hidden behind later constructions) are of ashlar with marginal dressing. Because of later building it is difficult to follow the plan, but we can distinguish four parallel barrel vaults at the ground-floor level. There are olive presses in adjacent vaults.

25 *Gith, Git, Tarenta? (Khirbat al-Burj, Qal'at Tantura, Horvat Tittura)*¹⁵⁶

A tower or hall-house situated half-way between Tel Aviv and Jerusalem on the northern road (map ref. 1520.1455), this building measures 15 m. e-w by 18 m. n-s. There is a door on the south. Stairs are located inside the wall to the right. The walls are 5.2 m. thick. The enclosure wall measures 50 by 50 m. and is 1.95 m. thick. The lower courses of the building exposed in recent excavations, are of stepped construction, and there are massive finely cut ashlar, possibly in secondary use, on the exterior wall. There are no stones with marginal dressing except for one on the interior, which is not a typical stone found in Frankish constructions but is similar to those dating to the Mamluk period. Similar work can be seen in parts of the Cave of Mahpelah in Hebron. There are no noticeable masons' marks. However, two steps in the upper surviving part of the staircase have typical Frankish diagonal tooling. Occasionally between the rows of ashlar on the exterior are stone chips with traces of plaster. Elsewhere the joints are remarkably exact. The masonry on the interior is of smaller stones. The fill of the massive walls (5 m. thick) consists of mud-mortar, fieldstones, stone chips and ashlar apparently taken from ruined structures in the

¹⁵⁵ Benvenisti, 1970, p. 233.

¹⁵⁶ Visited 20 January 1993 with the excavator S. Gudovich. Pringle, 1997, p. 35.

vicinity (the whole site of the village is covered with Roman-Byzantine ashlar). The part of the building now exposed measures 10 by 18 m. On the eastern wall is an arched gateway, partly standing, leading into a paved area with a gate to the interior and a staircase in the thickness of the wall. Pringle noticed slit-machicolation above the door. The floor has large stone pavers (the largest measuring 1 by 1.5 m.).

26 *Har Hozevim*¹⁵⁷

This was a twelfth century site near the Roman road to Jerusalem (map ref. 1703.1346). The site is unidentified. It was surveyed in 1984 by G. Mazor of the Department of Antiquities who described it as a Crusader castle. In 1993–94 the site was completely excavated by R. Kletter and N. May and was subsequently destroyed in September 1994. This complex consisted of an elongated two-storey building (12 by 19 m.) with two smaller vaulted rooms either side of its main door, a number of adjacent rooms and a walled courtyard (Figures 29, 94).¹⁵⁸ The entire area is c. 864 square m. Pottery and architectural evidence dates the building securely to the Frankish period. There were two main occupation phases: a Frankish phase in the twelfth century and a post-Frankish phase that is probably Ayyubid—late twelfth and early thirteenth centuries, possibly extending into the early Mamluk period.

The walls of the main vault varied in thickness. The narrowest wall on the west side was 1.7 m., the others averaged 2.5 m. Construction was of fieldstones (local limestone) of varying size, generally c. 40 by 40 cm. mixed with smaller stones and held together with soft grey mortar full of charcoal fragments. On the interior of the walls was a plaster coating some 2 cm. thick made of an inner layer (c. 14 mm. thick) of friable, grey plaster full of charcoal and lime fragments and a harder buff-coloured outer layer c. 6 mm. thick. It survived on much of the wall surface that was not exposed prior to excavation. The walls survived to the level of the springing and, on the southeast side, the first courses of the vault itself. On the corners were large roughly cut ashlar with border margins. The entrance to the vault was from the

¹⁵⁷ G. Mazor, "Jerusalem, Ramot Survey", *ESI* 3 (1984), p. 57.

¹⁵⁸ This Frankish farmhouse of the twelfth century was partially excavated in March–April 1993 by R. Kletter, and excavations were completed by N. May in January–April 1994, prior to the destruction of the building in September of that year.



Figure 94. Plan of farmhouse at Har Hozvim (courtesy of Natasha May, IAA).



Figure 95. Paved floor of farmhouse at Har Hozevim (photograph by author).

east, across the walled yard, directly opposite the entrance to the yard itself. It was not symmetrically placed, being much closer to the south wall of the vault. The threshold was cut in the bedrock itself, and upon it rest the walls. The doorposts were constructed of fine ashlar treated with the diagonal dressing of the Franks. The stone used for these ashlar, as is generally the case, was softer than that used for the walls themselves. Opposite, on the western wall, was a narrower door, 1 m. wide and partially blocked at a later stage, perhaps to convert it into a window. There were no windows on the ground floor of this structure. Beside the main door on the interior was a fairly large vaulted cupboard lined with plaster. The plaster was incised with herringbone trowel marks.

The floor was finely constructed of flagstones (Figure 95). The area slopes steeply down towards the north. The builders therefore first of all levelled off the area using stones averaging c. 30 by 30 cm. Over this fill was a layer of pebbles that was sealed with a thick plaster bedding 3 cm. thick. Onto this bedding the flags were laid with the same material as the bedding used to fill the spaces between the flags. In the area within the main doorway the floor was raised at some stage about 10 cm.

The ground floor was covered by a barrel vault. Construction of the vault employed an arch-shaped wooden frame, and the putlog holes supporting this frame remained in evidence at the level of the springing of the vault. There were several such holes in the part of the wall exposed to the southwest, which survived to somewhat above the springing of the vault, and one at the same level on the north-east. The vault itself had completely collapsed, apparently quite early on, and it can be seen in the exposed section within the vault.

Numerous roof tiles were found, indicating that the upper storey of the building was probably roofed with a sloping, tiled roof. There was also a staircase built within the east wall and entered within the northern side of the main doorway. The upper part of the stairway, which did not survive, must have turned at a right-angle and continued up the north wall of the building. This is clear because as it stood at the time of excavation it had nearly reached the corner but still had to climb a considerable way to rise above the vault.

There were two anterooms, the external measurements of the northern one being 5.5 by 7 m. and the southern one 5.5 by 8 m. These were added at a later stage, during the Frankish period or shortly thereafter, to either side of the main vault entrance to the east. These too were roofed with barrel vaults, but running north-south rather than east-west as does the main vault. The construction was not of the same quality as the main vault, and the uneven manner in which they encroach on the main entrance shows that these rooms were a later addition—but probably not much later, as the pottery throughout the site is fairly uniform. The vault to the north had a window on its northern wall. It contained five arched recesses built against the western wall (Figure 29). They had no opening at the top. Otherwise they were remarkably similar to the ovens inside the main vault.¹⁵⁹ Possibly they were used for storage, the top of the recesses serving as a work-bench. On the southern wall were two small square niches. The southern wall aligned with the northern doorpost of the main entrance. The southern vaulted room had a blocked entrance on its northern wall and a second door on its east wall. Its southern wall was partly constructed on the bedrock, and there was a bench along the east wall. There is evidence (plaster flooring) suggesting that these

¹⁵⁹ There seem originally to have been more such recesses built into the northern wall.

two rooms had a second storey as well. The area to the east and north of the farmhouse was enclosed within a well-constructed fieldstone wall. The entrance to this enclosure, as noted above, was to the east. The eastern area was quite large, roughly 12 by 23 m. and contained remains of two unidentified industrial or agricultural installations. Inside the main vault were three ovens built of brick-shaped stones, a table formed of a massive stone slab raised on stone feet (Figure 46) and three *tabuns*. The ovens were filled at a later stage, the area broadened and lengthened, and converted into a raised platform containing a large *tabun* and a stone-lined channel.

This building would appear to have been an isolated farmhouse or depot for the collection of tithes. It was probably situated near the same road leading from Parva Mahumaria via Montjoie and al-Burj (al-Kurum) to Jerusalem. Although there is no noticeable trace of the road in the immediate vicinity, in his survey of Ramot in 1984 G. Mazor noted remains of the Roman road nearby in Nahal Sofim and Sanhedria.¹⁶⁰ The ovens in this building would have served for baking bread for settlers in the surrounding countryside.

27 Jafenía? (Jifna, Gofna)¹⁶¹

Almost nothing is known of the history of this village which has sometimes been identified with Frankish Jafenía.¹⁶² It is situated in the village of Jifna, north of Ramallah (map ref. 1705.1522). There is here a large, rectangular courtyard building (25.5 by 30 m.). To its east is a monumental gate with a slit machicolation. It has an unusual arch of a type that appears later in Mamluk architecture. Recessed in a large pointed arch is a door with a flat, stepped lintel above which is a relieving arch (filled). The lintel has voussoirs whose upper sides form a horizontal line. There are rooms on either side of the passage from the gate. To the north, a large barrel-vaulted hall (interior 7.40 by 23.30 m., 6 m. high), originally entered from the courtyard, is now entered from the east. The walls are of fine quality masonry 2.40 m. thick. In one of the vaults is an olive press.

¹⁶⁰ Mazor, 1984, p. 45.

¹⁶¹ Pringle, 1997, p. 57.

¹⁶² Jafenía is not recorded in Frankish documents although the name Raimundus de Jafenía appears as a witness in a document of 1182. *RRH*, no. 613.

28 *Khirbat al-Burj, Burj al-Joz, Ramot* 06¹⁶³

At the top of the hill above the village of al-Kurum, on the road between Montjoie and Jerusalem (map ref. 1678.1367), are the remains of a massively built hall-house known as Khirbat al-Burj. It measures 270 square m. Although considerably larger, in plan it is not unlike the houses in the village of al-Kurum below (Figure 32), the principal difference being that it is a broad house rather than a long one. It is on an approximate north-south axis, with the entrance to the east. The construction is also similar to the village houses with massive walls, 1.8 m. thick on the south, 2.35 m. thick on the west and north and 1.4 m. thick on the east. The walls are built of fieldstones with rubble and mortar fill. The doorjambs are built of roughly dressed ashlar, apparently later repairs. The construction is held together with soft mud-mortar which resembles that used in the village houses. The interior and possibly the exterior of the walls were covered with plaster. A good deal of plaster remains on parts of the interior—although it may possibly date to recent times, as the building was restored and in use well into the twentieth century. In its repaired state it survived until 1967, at which time it was destroyed.¹⁶⁴ However from photographs it would appear that most of what was destroyed was the secondary, post-Frankish construction and that what remains today is from the original building (in the photographs one can clearly distinguish the lower courses, which are of large stones, from the upper restoration).¹⁶⁵ According to the Survey of Western Palestine, the roof was flat, with a tunnel (barrel) vault inside. The four windows had pointed arches. A staircase built into the wall led to the roof on the southeast side. There is no trace of this today. There was a cistern near the staircase (according to the Survey plan). The ruins as they survive are divided in two by an internal wall (which does not appear on the Survey plan of 1883 but is similar to divisions in the houses of the Frankish village of al-Kurum).¹⁶⁶ The Survey of Western Palestine notes that: “Older ruins of small town-walls, foundations, and heaps of stones-occur round

¹⁶³ Conder and Kitchener, 1881, p. 110.

¹⁶⁴ Personal communication from A. De Grot of the IAA.

¹⁶⁵ Matson, 1946, p. 241.

¹⁶⁶ See Conder and Kitchener, 1881, p. 110.

the tower.”¹⁶⁷ Traces of these can still be seen.¹⁶⁸ Nineteenth century sources describe traditions connected to the site:

Some thirty minutes’ climb brings us to a terraced hill-top on which we observe, to our left, a medieval ruin called El-Joz [the walnut] this is said by one tradition to mark the country house of Joseph of Arimathea, and by another to be the place where, on their walk to Emmaus, the two disciples were joined by the risen Christ. Thence in twenty minutes or so we reach Nebi Samwil.¹⁶⁹

And:

Following a side valley, the road soon passes along a prominent hill, crowned with a large restored ruin, called Khirbet el Burj, with a broad field to the south of it. The ruin belongs to the Russians, by whom it is claimed to be the site of Joseph of Arimathea’s summer house. Not far away to the S. is the village of Bait Ikka.¹⁷⁰

29 *Khirbat Bait Mizza, Mevasseret Zion*¹⁷¹

A complex of vaulted buildings on the hilltop opposite Castel in modern Mevasseret Zion (map ref. 1651.1348). This site, briefly described by Guérin,¹⁷² is possibly a farmhouse; it consists of a rectangular building, one side of which is covered with a small barrel vault aligned roughly north-west/south-east and measuring 6.5 by 9 m. (internal measurements) (Figure 96). It has an opening, possibly a door on the north-east wall, which is 1.05 m. thick. The long wall to the northwest is 1 m. thick. The quoins are built of ashlar with marginal drafting.

¹⁶⁷ Ibid.

¹⁶⁸ One wonders how accurate the drawing is by H. Fenn of Khirbet Burj, as seen from Nebi Samwil, published in G. Ebers and H. Guthe, *Palästina in Bild und Wort*, Stuttgart and Leipzig, 1883, Fig. 249. If it is reliable there was a small village around the tower that can be clearly seen at its center. The SWP, however, mentions, as noted, ruins of a small town. As both these works were published in 1883, the drawing of Fenn is either of an earlier date or gives a free reign to his imagination for details while remaining remarkably accurate with regard to topography. If we can rely on this drawing, we can note some details of the hall-house that would otherwise be lost to us. According to the drawing, this is a flat-roofed tower (just as described by the SWP) of two stories, the upper one having a single large (arched?) window on each wall (at least on the two in view), while on the lower floor there were two or three smaller windows on the wall in view. This would have to be one of the long walls, which have two windows each.

¹⁶⁹ Luke and Garstang, 1929, p. 216.

¹⁷⁰ Matson, 1946, p. 241.

¹⁷¹ Visited June, December, 1994.

¹⁷² Guérin, 1868, pp. 262–63.



Figure 96. Farmhouse at Khirbat Bait Mizza (photograph by author).

The area within these walls to the south-southwest of the vault may or may not have been roofed; only excavation could clarify this. There are at least three small barrel vaults to the south. Two of these are at present largely buried. The third, further to the south-west, is at least 10 m. long and about 6 m. wide. To the south-east of the first-mentioned vault is a wall extending south-east to yet another barrel vault, which is aligned northwest, south-east. There are many more walls to the south and east but much of this construction is certainly of later date. This whole complex requires excavation (only some trial soundings have been carried out to date);¹⁷³ but the site appears to be a complex of small, barrel-vaulted rooms and attached courtyards. The ceramic finds tell us nothing more than that the rooms were in use in the Middle Ages. The identification of the site as Frankish rests entirely on the appearance of its stonework, in particular the quoins built with marginally drafted ashlar.

¹⁷³ These were made by Y. Billig of the IAA in 1993.

30 *Khirbat Bir Zait*¹⁷⁴

This building, identified by Benvenisti as a Frankish farmstead¹⁷⁵ is situated on a hilltop c. 7 km. north of Ramallah (map ref. 1682.1525). The entire complex measures c. 35 by 37 m. Thick walls on the north and east, and barrel-vaulted structures on the south and west enclose a courtyard. There are two vaults 20 m. long and 4–6 m. wide. In the south-east corner is a barrel-vaulted room with a loophole in the south wall that may have originally extended the length of the eastern side. There is a rock-cut cistern in the courtyard. Construction is of well-cut, undressed stones and chips.

31 *Khirbat al-Lauza*¹⁷⁶

This site is located off the main Tel Aviv-Jerusalem highway (map ref. 1658.1359). The farmhouse was examined and underwent brief excavation in 1986–88.¹⁷⁷ It consists of a group of buildings and walls surrounding a courtyard with a large reservoir to the south (Figures 30, 97, 98). To the east is a barrel-vaulted hall measuring internally 4.8/5.5 by 21 m. The height is 2.4 m.; the external height survives to 6 m. The walls are 2.2 m. thick. There are five windows on the east, one on the north. They are in the form of arrow slits on the exterior; but their positioning 3 m. above the floor, their form and the way they face upwards show that they were intended not for defensive purposes but as a source of light. The courtyard had its main entrance at the southern end of the east wall. It is 3.5 m. wide. To the south is a three-storey structure probably used for living quarters and storerooms. Outside the walled courtyard is the large reservoir with a capacity of 1,200 cubic m.

32 *Manueth (Khirbat Manawat, Horvat Manot)*¹⁷⁸

This site is northeast of Acre on the southern slope of Wadi al-Qurayn (map ref. 1644.2716). There are three structures of Frankish date: two barrel vaults (the larger one a hall), a sugar mill and a tower on the hill

¹⁷⁴ Pringle, 1997, p. 34.

¹⁷⁵ Benvenisti, 1970, p. 237.

¹⁷⁶ Pringle, 1997, pp. 65–66.

¹⁷⁷ See Ellenblum et al., 1996, pp. 206–9.

¹⁷⁸ Visited with R. Frankel, 11 October 1993.

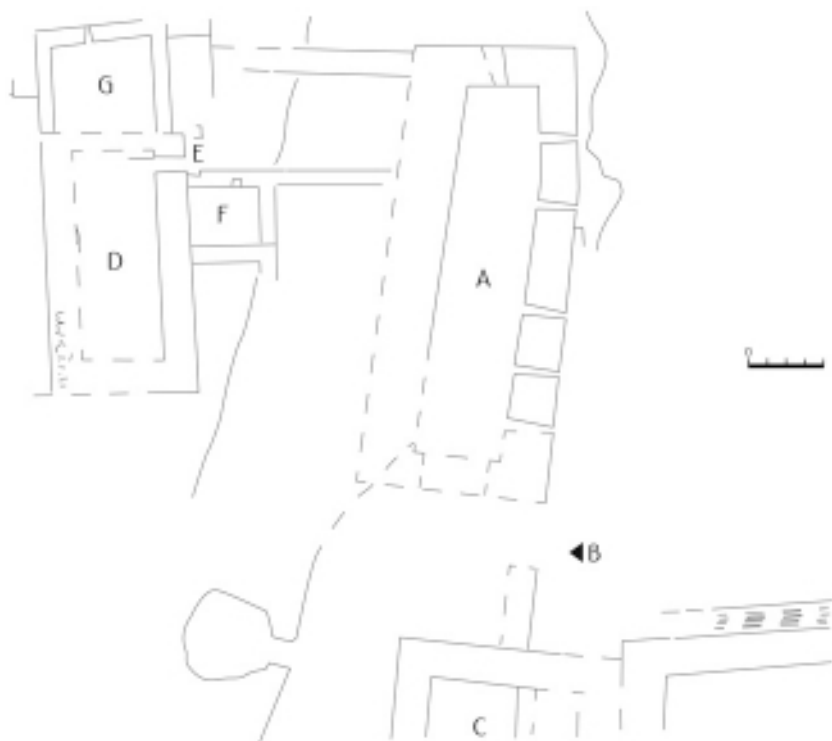


Figure 97. Plan of farmhouse at Khirbat al-Lauza (courtesy of Ronnie Ellenblum).

above. Manueth was the centre of a small fief in a sugar-growing region. From the 1160's it was held by Godfrey le Tour and from the 1180s by Joscelin de Courtenay. In 1187 it fell to Saladin, but it returned to the de Courtenay family five years later. Manueth was sold to the Hospitallers in 1212. It fell to Baybars in 1260 but must have been retaken by the Hospitallers, for in 1270 they leased it to the Teutonic Order. It remained in Frankish hands at least until 1278.¹⁷⁹ According to Benvenisti this was a crop-collecting and supply-distributing centre (storehouse) with a flour mill and tower. The "flour mill" with an aqueduct has been identified by R. Frankel as a sugar mill,¹⁸⁰ and the "storehouse" is probably a hall-house similar to the one at Har Hozevim

¹⁷⁹ See Benvenisti, 1970, pp. 229–30; Benvenisti, 1982, p. 135; *RRH*, nos. 1374c, 1425a.

¹⁸⁰ Personal communication.



Figure 98. Farmhouse at Khirbat al-Lauza (courtesy of Ronnie Ellenblum).

(Figure 99). The hall may have been constructed by the Hospitallers. It is an elongated building constructed of ashlar, with two pointed-arch entrances. A staircase is built into the thickness of the wall. Ovens for boiling the molasses were excavated by E.J. Stern on the northern wall in 1995.¹⁸¹ On the hill above the refinery is a second building, which appears to have been of medieval date and may have been a tower-keep. Both sites abound with medieval shards. Near the lower building are a great many sugar moulds and jars.

33 *Parva Mahumaria (al-Qubaiba)*

This building is situated at the centre of the village of Parva Mahumaria.¹⁸² It was apparently still standing in the beginning of the sixteenth century but was destroyed by 1517, when the stones were taken by Selim II for the rebuilding of the walls of Jerusalem.¹⁸³ It is a rectangular building (48 by 68 m.) and has been identified as the curia or castle

¹⁸¹ Stern, 2001, pp. 277–308.

¹⁸² See above, pp. 232–36 for a detailed description of this site.

¹⁸³ Bagatti, 1993, p. 104.



Figure 99. Sugar refinery and estate centre at Manueth (Khirbat Manawat) (photograph by author).

of Parva Mahumaria. The entrance was on the east of the building, off the main street to the south. At the north-east corner stood a square tower. Within the curia were chambers of the same plan as the village houses. These opened onto the central courtyard, where there was a cistern. At the centre was a hall on an east-west axis, possibly the house of the dispensator. Bagatti calls this building a “castle” but notices that it is unfortified.¹⁸⁴ In any case it could serve as a place of refuge as it had thick walls and contained cisterns. The building incorporates some early (Roman) structures along the road. Floors in the Frankish rooms were of white plaster.

34 *Qalonie, Saltus Muratus (Qaluniya, Moza)*¹⁸⁵

A small Frankish building 3 km. west of Jerusalem on the road to Jaffa (map ref. 1656.1333), the Survey of Western Palestine identified this

¹⁸⁴ Ibid., p. 105.

¹⁸⁵ Visited 27.10.93, December, 1994. Pringle, 1997, p. 83.



Figure 100. Farmhouse at Qalonie (Qaluniya) (photograph by author).

site as a small monastery of the Byzantine period.¹⁸⁶ The construction of this building is, however, typically Frankish: marginally drafted ashlars at the quoins, massive walls measuring 4–4.5 m. thick constructed of large hard limestone fieldstones and chips, and a rubble and mortar fill with large pieces of lime in the bonding between the outer stonework (Figure 100). The external width of the vault is 15 m. (7 m. internal), and the length is 30 m. The walls survive in the north, south and east to just above the springing of the vault. The wall to the west is buried. The stones on the inner face vary in size, including several large stones of about 50 cm.–1 m. in length. On the exterior to the south ten courses are exposed (c. 5 m. in height). The lower two or three courses are large fieldstones. Above these (at the quoins) are well-shaped ashlars, the larger ones measuring c. 60 cm by 1.3 m. The margins are between 8 and 14 cm. and the bosses protrude c. 6 cm. No diagonal dressing is evident on this structure. However, about 18 m. to the northwest are the remains of a second Frankish structure

¹⁸⁶ Conder and Kitchener, 1881, p. 132.

consisting of a fairly large groin vault (c. 7.45 by 4.2 m.), the stones of which are all worked with diagonal tooling. What survives of this building are three arch springers. The vault may have extended originally to the north and south. At present the south is incorporated in a later building and the area to the north is covered. There is a small arch to the east. Additional vaults were recently excavated as well as a vaulted water cistern (above pp. 175–77). In two adjacent buildings diagonally dressed stones can be seen but in secondary use. From what we can see of the main barrel-vaulted structure, this may have been a building similar to the farmhouse at Har Hozevim—that is, a simple structure basically consisting of a single barrel vault, possibly with an upper floor and some smaller rooms added at a later date.

35 *Rentia, Rantia (Rantiya, Nopheq)*

This site is located c. 20 km. north-northeast of Lydda (map ref. 1427.1612). It is mentioned in a document of 1122.¹⁸⁷ This is a barrel-vaulted structure 10 by 20 m. and 4 m. high. It has two loopholes on the east wall and two on the west. On the east are two entrances. The walls are 2.30 m. thick and constructed of medium-sized ashlar. There are traces of an outer wall on the west side. J. Ory referred to it as a khan or fort.¹⁸⁸

36 *Rushmia, Francheville (Khirbat Rushmiya, Rosh Maya)*¹⁸⁹

This building stands on a spur overlooking Wadi Rushmiya, on the route to Mount Carmel from the north (map ref. 1502.2439). It may possibly be identified as Frankish Francheville. It measures 13.2 by 20.8 m. and the walls are 2.5 m. thick. On its north-east corner is what Pringle describes as “a rectangular turret or fore-building”¹⁹⁰ measuring 8.7 by 11.2 m. and projecting 3.9 m. on the east and 4.4 m. on the north. This projection is apparently a later addition. The interior was partly groin-vaulted and partly barrel-vaulted. There are arrow slits and the fortified appearance of the building and its proportions suggest that it was a typical Frankish rectangular keep. Ellenblum this building as a

¹⁸⁷ *Cart. gén. Hosp.*, no. 59.

¹⁸⁸ PAM 156, (1945).

¹⁸⁹ For sources see Pringle, 1997, p. 91.

¹⁹⁰ *Ibid.*

farmstead or maison forte or a ecclesiastical house, Pringle calls it a tower.¹⁹¹

37 *Saluatio? (Khirbat Tannur)*¹⁹²

This is a twelfth century site; it has not been identified in documents, but Pringle raises the possibility that it is the Cistercian house, *Saluatio*.¹⁹³ It is situated near the village of Mata (Allar), 14 km. west of Bethlehem, near the ancient road to the Valley of Elah and in the territory that belonged to John Gothman until 1161 (map ref. 1548.1247). It is a well-constructed courtyard complex that includes a finely built chapel. It was surveyed by the British, who described it as appearing to have been an ancient church.¹⁹⁴ In the Mandatory records these ruins were identified as a church and cloister.¹⁹⁵ However, as Pringle has noted, they have “a more utilitarian character of farm buildings than of cloistered ranges”.¹⁹⁶ Benvenisti describes a hall with dwelling rooms on the eastern side and a farmyard to the west.¹⁹⁷

The complex consists of five barrel-vaulted rooms built around a courtyard, with a chapel built onto the exterior of the western wall. On the south and east are two connecting halls. The south hall measures 10 by 28 m. (7 by 26 m. internally) and has three intersecting pointed barrel vaults. There are three blind arches on the south wall and a single blind arch and two open arches on the northern wall. The open arches give access to the courtyard, while to the north of the blind arch is a small barrel-vaulted room. The use of a blind vault here suggests that the small vaulted room was contemporary with the larger room. This small vault has a single blind arch on its northern wall and a small niche. It measures 6 by 10 m. (4.82 by 9.30 m. internally). There is a shaft opening at the apex of the vault. At the eastern end of the large room is an entrance to the eastern vaulted room. This room measures 10 by 16.5 m. (6.10 by 13.8 m. internally). It has an opening to the courtyard in the northern end of its western wall. This apparently

¹⁹¹ Ellenblum, 1991, 124; 1998, p. 66; Pringle, 1997, p. 90.

¹⁹² Visited with D. Weiss in July, 1993. Pringle, 1993, pp. 47–50.

¹⁹³ Pringle, *Ibid.*, p. 50. Although probably a monastery it is possible that Khirbat Tannur originally was a secular building.

¹⁹⁴ Conder and Kitchener, 1881, pp. 62–63.

¹⁹⁵ *PAM* 7.

¹⁹⁶ Pringle, 1993, p. 50.

¹⁹⁷ Benvenisti, 1970, p. 235.

gave access under a staircase which, Pringle notes, is built against the exterior of this wall and which would no doubt have given access to an upper living level. To the north of this eastern room are two long, barrel-vaulted halls extending out to the east. The chapel with its three groin-vaulted bays is built on the exterior of the complex, to the west. The courtyard wall on this side extends northwards.

TABLE 13: ANALYSES OF PLASTER AND MORTAR FROM FRANKISH SITES

PLASTER		MATRIX			NON-PLASTIC MATERIAL					
SITE	colour	%	voids	% of whole	quartz	carbon	other	Size distr.	quality	sorting
Chast Pelerin	cream	75	some	25	30%	2%		30% large 70% small	sub-rounded high sphericity	very poor sorting
	light grey	30	some small	70			10% brown 40% lime	40% large 60% small	angular low sphericity	very poor sorting
Maldoim Castle	grey	70	numerous	30		40% elongated	30% brown- white, grey 30% white	30% large 70% small	angular low rounded	very poor sorting
Har Hozevim	white, grey	95 85 20		5 15 80			black black grey	30% large 70% fine	sub-rounded, sub-angular, angular	very poor sorting
	white	95	numerous round	5			brown		sub-angular high and low sphericity	good sorting
Ka'akul	cream	25		75			white & brown	30% large 70% small	sub-rounded high sphericity	very poor sorting
Ka'akul	cream	25		75			white & brown	30% large 70% small	sub-angular sub-rounded	very poor sorting
MORTAR										
Acre wall	cream	55	5%	45		1 piece fragmented	brown & white	40% l 60% s	angular high sphericity	very poor sorting

Table 13: (cont.)

MORTAR			MATRIX		NON-PLASTIC MATERIAL					
SITE	colour	%	voids	% of whole	quartz	carbon	other	Size distr.	quality	sorting
Acre 1:10	brown	90	some angular	10	some		grey & white	15% l 85% s	rounded high and low sphericity	very poor sorting
Acre	cream	90		10		40% large/fine	grey & brown		sub-rounded low sphericity	well sorted
Har Hozevim	grey	40		60			white & brown	40% large	sub-rounded high sub-angular low sphericity	very poor sorting
Acre	buff	90		10			grey & brown	17%		well sorted
Acre	grey	85	several angular	15			white & buff	large	angular low sphericity	well sorted
Al-Burj	sand	60	some	40			brown	large & small	sub-rounded high sphericity	well sorted
Acre 1:11	White	95		5			white	large	sub-rounded high sphericity	well sorted
Acre 1:22	Grey	30		70	some	10%	brown & white	medium	angular high sphericity	well sorted
Acre	white	10	some	90			brown & cream	medium	rounded low sphericity	well sorted
Acre	buff	90		10			shell & lime		very angular low sphericity	well sorted
Acre	grey	10	numerous	90			grey & brown		angular sub-rounded low sphericity	very well sorted

GLOSSARY

Ablaq Arabic term for the alternate placing of stones of different colours, light and dark, in the frame of a door or window. The technique probably originated in Syria in the Byzantine period and is first recorded in Islamic architecture in repairs carried out in the north wall of the Great Mosque of Damascus dated to 1109. It became very typical in Mamluk mosques and madrasas and is only occasionally found in Frankish architecture.

Arris Sharp edge at the meeting of two surfaces in a vault. In Frankish architecture this was generally formed of small brick-sized stones placed in a herringbone pattern. The term originated in the Latin *arista* meaning bone of a fish.

Ashlar Large, squared building stones usually applied as a facing on a rubble core or at the quoins (corners) of structures otherwise constructed of coarse masonry, to form an accurate angle.

Bacini Bowls set into a wall for decorative purposes, usually on the facade of a church. Examples can be seen in medieval churches of Pisa, Lucca, Pavia, in Corsica and Sardinia. Bacini are occasionally found on domestic buildings as well, including houses of Acre, but surviving examples appear to be of Ottoman date.

Bannum Latin term from Anglo-Saxon *gebann*, for the feudal lord's monopolistic right to construct an installation such as a grain mill, oven or wine press and compel the local peasants to use it and pay for its use.

Barrel Vault Known also as a tunnel vault, the barrel vault is an extended arch forming curved, semi-cylindrical roofing. The most basic type of vaulting, its chief disadvantage lies in the considerable outward thrust to either side which made thick side walls with few openings mandatory, and the limited span (width) of the vault which was dependant on the length of timber beams available for its construction framework. Barrel vaults were used in ancient Egypt and were frequently employed in Roman architecture. In the medieval period (in the Latin East from as early as the first half of the twelfth century, somewhat later in the West) barrel vaults were frequently slightly pointed.

Bay Space covered by a single vault, usually applied to groin or rib-vaulting.

Bezant Gold coin in use in the Latin East during the Crusader period. The bezant of the Kingdom of Jerusalem was an imitation of the Fatimid gold dinar of the Caliph al-Amir (1101–1130).

Boss Carved ornament decorating the intersection of ribs in a vault.

Bracket Projecting stone employed to support weight such as a supporting arch in a vault.

Brazier Movable fireplace of metal, stone or ceramic which was in common use in many regions prior to the introduction of the fireplace and wall chimney.

Burgage Plot Elongated plot of land on which a house was built and extending beyond it for use as a garden.

Carruca Two types of measures of farmlands based on the area that could be ploughed by a pair of oxen in a single day or alternatively in a year (season). The former, referred to by Prawer as the "local Arab carruca" was the equivalent of the Western *journée* or *journal* which he identifies with the *faddān* (see below).¹ The latter type which Prawer refers to as the "official carruca" and which was a unit of

¹ Prawer, 1980, p. 157. See also pp. 157–62 and Ellenblum, 1998, pp. 98–9, n. 15.

taxation, he estimates at 35 ha.² Carruca, a term of Latin origin, was also the name of a heavy metal plough introduced in Europe around the tenth century.

Casal (casale, casalia) Latinized French term for village which was in common use in the Latin East originated in Western Europe and stemmed from the Latin word, *casa* (house or farm); *casal* being a cluster of houses in a rural setting. Occasionally it is referred to in equivalent terms such as *feuda*, *villae* and *loca suburbana*, but *casal* (*casale*) is the most frequent form found in medieval charters and documents. In the Latin East the *casal* was the basic unit of rural habitation, isolated farms (*curtiles*) being a comparatively uncommon type of settlement in this period. Sources relating to the Latin East record hundreds of *casalia* occupied by Franks, Eastern Christians and Muslim peasants and even one by Samaritans. The *casalia* varied considerably in size and in population; from small hamlets of a few isolated houses to large rural settlements that could almost be defined as towns were it not for their complete lack of urban institutions. A typical *casal* consisted of the manor house and church, the villeins' dwellings, some communal installations such as mills, ovens, dovecots and threshing floors, crofts, common pasture and the village's arable lands. The arable land of a *casal* was defined in units of ploughland known as *carruca*. One or two *carrucae* was the usual size of a villein's holding. Frankish settlers in a *casal* in the Latin East were freemen whereas the Western villein was generally of servile status.

Centring Temporary support constructed in order to erect an arch, vault or dome.

Cloister From the Latin *claustrum* or *clausure* (to shut up), refers to a quadrangle surrounded by a covered walk around which monastic buildings including the church, sacristy, scriptorium, kitchen, refectory, dormitory, chapter house and infirmary are arranged. Reserved exclusively for the members of the community the cloister was so important that the term has become synonymous with monastic life.

Console see Bracket.

Croft Anglo-Saxon term for small plot of land behind the toft, the plot on which a peasant's house was built. The croft was used to raise livestock and grow fruit and vegetables for personal use of the peasant family.

Curtile In the Latin East this term refers to a rural holding, usually a farm.

Dār Arabic term for dwelling place or house. From *dāra*, meaning 'to surround' it denotes an encampment (rather than a shelter, *bayt*). The use of this term incorporates in it the nature of the Arabic domestic building which is traditionally a courtyard house.

Debesh Arabic term for rubble or stone chips and mud-mortar fill used to construct a thick wall, the fill being poured into the space between two faces of the wall.

Dispensator Latin term for steward representing the landlord in rural estates. The dispensator or locator occupied apartments in a castle or rural estate centre and from there managed the estate and lands of the lord, collecting taxes, solving disputes and managing rural activities in general.

Dog Tooth Moulding tooth-shaped decoration on moulding employed in the Crusader period and possibly introduced to the West from the Near East during the Crusader period.

Domus Latin term referring to the house or household.

Dormitory Communal bedroom in monastic establishments or in houses of the Military Orders. From the Latin, *dormitorium*.

Escutcheon Shield-like shape bearing a coat of arms. From the Middle English *escuchon*, Norman-Anglo *escuchon*, Vulgar Latin *scutio*, Latin *scutum* meaning shield.

² Ibid., p. 158.

- Faddān 'Arabi** Measurement of land employed in the Near East which is equivalent to the Western ploughland. Its size varies in different regions. Prawer equates it with the "local carruca".³
- Faubourg** French term, originally *forsbourg*, deriving from the Latin *foris* (out of) and the Vulgar Latin (Germanic) *burgum* (town or fortress). The faubourg was a settlement that developed outside a fortified town or a castle relying on the fortifications as a deterrent against attack. In times of danger the settlers would find safety behind the fortification walls. Eventually these settlements often became fortified themselves.
- Finial** Upper portion of a vault hood mould of a Gothic doorway usually forming a leafy feature.
- Fondaco** Term originating from the Arabic *funduk*. A merchant commune's trading post, the fondaco was a single or more often group of buildings arranged around a courtyard and included shops, offices, warehouses and dwellings.
- Garderobe** Small chamber attached to a hall or solar. The term originated in the Middle English/Old French *garder* (to guard) *robe* (clothing). Indeed originally used as a place to store clothes it has taken on as well the meaning of privy or latrine.
- Gargoyle** Projecting water spout to carry water off a roof, often grotesquely carved. Of French origin, *gargouille* meaning throat or gullet or Latin *gurgulio*.
- Geniza** A Hebrew term deriving from the Persian *ganj* meaning storehouse or treasure. The *geniza* is a room, cupboard or attic in a synagogue used to store discarded texts which cannot be destroyed because they mention God's name. The term is often used to refer specifically to the Cairo Geniza in the Ben Ezra Synagogue in Fustat (Old Cairo) in which nearly 200,000 documents dating from the 9th to the 19th century were found. These include a wealth of material relating to communal matters and to the daily life of the Jewish community of Cairo, but reflect also on other communities, merchants and trade in the Levant in general. Important studies of this material have been published by S.D. Goitein, E. Ashtor and other scholars.
- Gothic Style** Term first employed by Giorgio Vasari in the sixteenth century to describe the art of the period between the fall of Rome and the Renaissance. In reality Gothic art as we define it today relates to the period commencing in the mid 12th century and extending to the early sixteenth century. Whereas Gothic art covered all art forms, the term chiefly refers to architecture, in particular to ecclesiastical architecture, to the application of the principles of rib vaulting, and to such techniques of construction and decoration as the use of pointed arches and stained glass.
- Groin Vault** Vault formed of two intersecting barrel vaults, the groin being the curved arris formed at the intersection of the vaulting surfaces. In this vaulting, as opposed to barrel vaults, the weight is carried to the four corners and supported on piers, thereby enabling unlimited expansion of a roofed area by the addition of more piers and vaulted bays.
- Hammam** Muslim bathhouse which employs the use of steam formed by heating the floor and walls through the use of a hypocaust or ceramic pipes. The hammam which has become associated principally with areas under Turkish rule existed in various forms since the Umayyad period and was a continuation of the classical bathhouse. In Islam it came to fulfil a role more closely linked to religion than to leisure and was generally located in a city near the principal mosque and the market, the latter in order to serve the needs of travelling merchants. The main difference between Islamic hammam and Roman bathhouse was in its layout. In the

³ Its size in the Lordship of Tyre was about 0.19 ha. See Prawer, 1980, p. 159.

- former the changing room was separated from the bathing area to ensure a greater degree of privacy whereas in the Roman bathhouse the changing room and bathing areas were on a single axis.
- Hood-mould** Also known as a label mould, a projecting moulding over the head of a doorway or window intended to deflect the rain.
- Imbreces (sing. Imbrex)** Baked clay roof tiles of arched form, used together with the *tegulae* to clove the joints of the latter and prevent seepage of water.
- Iwan** Persian term (Liwan in Arabic) vaulted hall or room facing a courtyard with three sides walled and the fourth open onto the courtyard.
- Joggling** Decorative technique employing the use of interlocking stones in a lintel or as voussoirs of an arch. Often used in conjunction with *ablaq*.
- Kurkar** Wind-bedded sandstone which forms a ridge along the coast of Israel and in the past served as the principal source of building stone for settlements and fortifications built along this coast.
- Lintel** Horizontal stone spanning an opening, doorway or window.
- Locator** See Dispensator.
- Loggia** Common feature in medieval Italian domestic architecture and employed in the houses of the Italian communes in Acre and Tyre. The loggia was a covered gallery with an open arcade or colonnade between the house and the street. The loggia could be on the ground floor or raised to an upper storey.
- Machicolis (Machicolation)** Opening above a doorway or along a fortification wall through which objects or boiling liquids could be dropped on assailants. Above doors these were usually in the form of slits or shafts between two arches or as small balconies supported on corbels. On fortification walls there could be either balconies or galleries.
- Maison forte** Fortified rural estate centre. A type of manor house established by feudal lords that was typical of rural France in the twelfth to thirteenth centuries.
- Marginal Drafting** Working of the margins of an ashlar to form a smooth levelled border on its external surface.
- Mastaba** Raised platform in a traditional Palestinian house which served as the living and sleeping area of the family.
- Matmūra** Arabic term for an underground storage room or area. These were used to store grain, wine or items of value.
- Oeil-de-boeuf** Bull's eye; a small circular or oval wheel-like window.
- Ogee** A window or door moulding consisting of convex and concave curves.
- Palazzo** Large domestic buildings which in the Italian communes in the Latin East were either administrative buildings or communal apartment buildings.
- Parvis** Open, paved courtyard before a church.
- Passagia** Two short periods in the spring and autumn when it was comparatively safe to travel by ship to the Eastern Mediterranean. Most trade and pilgrim travel took place during the *passagium*.
- Piano Nobile** Italian term for the principal storey of a building.
- Putlog Holes** Holes or open spaces between stones placed at equal distances along the top inner faces of two parallel walls that are to be vaulted over with a barrel vault. The holes served as slots into which transverse beams were inserted to form the bases for semicircular scaffolding onto which the vault was constructed.
- Quadriburgium** Rectangular fort consisting of four curtain walls and projecting corner towers.
- Refectory** Communal dining hall in a monastery or house of a military order.
- Reredorter** Latrine tower or chamber in a monastery usually attached to the south of the monks' dormitory to be conveniently located for use prior to the night hours.
- Rib Vault** Developing from the groin vault, the groins being replaced by profiled stone ribs which were usually constructed first, the spaces between being filled by

light masonry. This was the basis of the Gothic system, the light weight rib network allowing the construction of taller, lighter buildings.

Romanesque Style Style or architecture based on Roman architecture which was prevalent in the West from the ninth to mid-twelfth century and was employed in the Latin East with some changes, most notably the use of pointed rather than round arches and vaults.

Sirdāb Arabic term for underground or half-underground room in Islamic houses, used as a refuge from heat during the summer.

Soffit Ceiling or underside of an architectural member.

Solar Hall or room for private use on the upper floor of house.

Spolia Latin term for stones from an ancient building in secondary use for decoration or strengthening of a structure or simply as building stones.

Tābūn Palestinian-Arabic term referring to a dome-shaped clay and straw baking oven used in the Near East since biblical times.

Tegulae Latin term for flat roof tile used in conjunction with **imbrices**.

Terraticum Latin term for land tax paid in shares of the crop to the church.

Toft Plot of land on which a house was constructed. Like the longer croft which extended beyond it, it served as a garden providing some basic needs for the family.

Turba Arabic term literally meaning earth, dust or soil which has come to acquire the meaning of funerary architecture, notably tomb or mausoleum.

Tympanum Triangular surface bordered by the lintel and arch of a doorway or window.

Undercroft Underground room chiefly used for storage.

Villa Nova Latin term, *villeneuve* in French denoting a type of newly founded village. Such establishments aided in the settlement of forest and wastelands in the great surge of clearance and reclamation from c. 1000 to the middle of the thirteenth century.

Voussoir From Old French (*vossoir*) and Vulgar Latin (*volsōrium*) meaning a wedge-shaped stone used to form an arch. This term was in use at least since the thirteenth century.

BIBLIOGRAPHY

Primary Sources

- Adler, E., 1907, *Jewish Travellers*, London.
- Ambroise, *L'estoire de la guerre sainte (1190–1192)*, ed. and French trans. G. Paris, Paris, 1897. *The History of the Holy War* (Ambroise's *Estoire de la Guerre Sainte*), trans. M. Ailes, Woodbridge, 2003.
- Anonymous of 1480, *Le Voyage de la Sainte Cyté de Hierusalem*, Paris, 1882.
- Berggötz, O., *Der Bericht des Marsilio Zorzi. Codex Querini-Stampalia IV3 (1064)*, Frankfurt am Main, Bern, New York, Paris, 1991.
- Bresc-Bautier, G. (ed.), *Le Cartulaire du chapitre du Saint-Sepulcre de Jérusalem*, *DRHC* vol. 15, Paris, 1984.
- Le Bruyn, C., *Reizen van Cornelis de Bruyn, door de vermaardste deelen van Klein Asia... Aegypten, Syrien en Palestina*, Delft, 1689.
- Burchard of Mount Sion, *Descriptio Terrae Sanctae*, in J.C.M. Laurent, ed., *Peregrinatores Medii Aevi Quatuor*, Leipzig, 1864, pp. 1–100. English trans. A. Stewart, *PPTS* 12, London, 1896.
- La Citez de Jherusalem*, English, trans. C.R. Conder, *PPTS* 6, London, 1896.
- Daniel of Kiev, English trans. C.W. Wilson, *PPTS* 4, London, 1895.
- Delaborde, H.F. ed., *Chartes de la Terre Sainte provenant de l'abbaye de Notre-Dame de Josaphat*, Bibliothèque des Écoles françaises d'Athènes et de Rome, vol. 19, Paris, 1880.
- Delaville le Roulx, J., ed., *Les Archives, la bibliothèque et le trésor de l'ordre de Jean de Jérusalem à Malte*, Bibliothèque des Écoles françaises d'Athènes et de Rome, vol. 32, Paris, 1881.
- , *Cartulaire general de l'Ordre des Hospitaliers de St. Jean de Jérusalem (1100–1310)*, 4 vols., Paris, 1894–1906.
- Desimoni, C., “Quatre titres des propriétés des Gènois à Acre et à Tyr”, *Archives de l'Orient latin*, vol. 2, Paris, 1884, pp. 217–19.
- Felix Fabri, English trans. A. Stewart, *PPTS* 7–10, London, 1883.
- Fulcher of Chartres, *Gesta peregrinantium Francorum cum armis Hierusalem pergentium*, in *RHC (Occ)*, vol. 3, *Historia Hierosolymitana (1095–1127)*, H. Hagenmeyer, ed., Heidelberg, 1913, pp. 311–485. English trans., F.R. Ryan, *A History of the Expedition to Jerusalem 1095–1127*, Knoxville, 1969.
- Ibn Jubayr, *The Travels of Ibn Jubayr*, trans. R.J.C. Broadhurst, London, 1952.
- Jacques de Vitry, *Historia Orientalis (Historia Hierosolymitana)*, ed. J. Bongars, *Gesta Dei per Francos*, vol. 2, Hanau, 1611, pp. 1047–1124. English trans. A. Stewart, *PPTS* 11, London, 1896.
- Joannes Phocas, *Joannes Phocas, Descriptio Terrae Sanctae*, *PG*, vol. 133, Paris, 1864, pp. 927–62. English trans. A. Stewart, *PPTS* 5, London, 1892.
- John of Joinville, *Histoire de Saint Louis*, ed. N. de Wailly, new edition, Paris, 1906. English trans. M.R.B. Shaw, *Chronicle of the Crusade of Saint Louis*, in *Memoirs of the Crusades*, New York, 1963.
- King, E.J., *The Rule, Statutes and Customs of the Hospitallers 1099–1310*, London, 1981 (repr. of 1934 edition).
- Kohler, C., ed., “Chartes de l'Abbaye de Notre-Dame de Josaphat”, *ROL*, 7, 1899, pp. 108–222.
- Louis of Rochechouart, *Journal de Voyage*, ed. C. Couderc, in *ROL*, 1983.

- Ludolf of Suchem, *De Itinere Terrae Sanctae*, ed. F. Deycks, Bibliothek des Litterarischen Vereins in Stuttgart, vol. 25, Stuttgart, 1851. English trans. A. Stewart, PPTS 12, London, 1895.
- al-Muqadassi, Muhammad Ibn Ahmad, *Description of Syria Including Palestine*, English trans. Guy le-Strange, PPTS 3, London, 1896.
- Naser-e Khusraw, *Naser-e Khusraw's Book of Travels*, trans. W.M. Thackston, New York, 1986.
- Shirley, J., trans., *Crusader Syria in the Thirteenth Century: The Rothelin Continuation of the History of William of Tyre with Part of the Eracles or Acre Text*, Aldershot, 1999.
- Strehlke, E., republished Toronto, 1975, *Tabulae Ordinis Theutonici*, Berlin, 1869.
- Theodericus, in *Peregrinationes tres: Saewulf, Johannes Wirzburgensis, Theodericus*, ed. R.B.C. Huygens, *Corpus Christianorum. Continuatio Medievalis*, vol. 139, Turnhout, 1994. English trans. A. Stewart, PPTS 5, London, 1891.
- Upton-Ward, J., trans., *The Rule of the Templars; The French Text of the Rule of the Order of the Knights Templar*, Woodbridge, 1992.
- Usamah Ibn Munqidh, *An Arab-Syrian Gentleman and Warrior in the Period of the Crusades, Memoirs of Usamah Ibn Munqidh (Kitab al-I'tibâr)*, trans. Philip K. Hitti, Princeton, 1927, reprinted London, 1987.
- Wilbrand of Oldenburg, *Peregrinatio*, ed. J.C.M. Laurent, *Peregrinatores Medii Aevi Quatuor*, Leipzig, 1864, pp. 159–91.
- Wilelmus Tyrensis, *Chronicon*, ed. R.B.C. Huygens, *Corpus Christianorum, Continuatio Mediaevalis* 63, 63A, Turnholt, 1986. English trans., E.A. Babcock and A.C. Krey, *A History of Deeds Done Beyond the Sea*, 2 vols., New York, 1943.

Secondary Literature

- Abel, F.M., 1926, "Les deux 'Mahomerie', el-Bireh, el-Qoubeybeh", *RB* 35, pp. 272–83.
- Abrams, P., E.W. Wrigley, 1978, *Towns in Societies*, Cambridge.
- Ahsan, M.M., 1979, *Social Life under the Abassids*, London, New York.
- Amiry, S., V. Tamari, 1989, *The Palestinian Village Home*, London.
- Anderson, R., n.d., *Examples of the Municipal, Commercial and Street Architecture of France and Italy from the 12th to the 15th Century*, Edinburgh.
- Arad, P., 2006, "Thanks to a Neighbour's Bad Reputation: Reconstructing an Area of Thirteenth-Century Acre", *Crusades* 5, pp. 193–97.
- Ariosto, A., 1863, *Topographia Terrae Promissionis*, ed. P. Marcellino of Civezza, Rome.
- Ashtor E., 1978, *The Medieval Near East: Social and Economic History. Collected Studies*, London.
- , 1961, "Essai sur les prix et les salaires dans l'empire califien" *Rivista degli studi orientali*, 1961, pp. 58–59.
- Astill, G.G., A. Grant, 1988, *The Countryside of Medieval England*, Oxford.
- Avissar, M., 2005, *Tel Yoqne'am. Excavations on the Acropolis*, IAA Reports 25, Jerusalem.
- Avissar, M. and E.J. Stern, 2005, *Pottery of the Crusader, Ayyubid and Mamluk Periods in Israel*, Jerusalem.
- Baedeker, K., 1876, 1898, *Palestine and Syria. Handbook for Travellers*, Leipzig.
- Bagatti, B., 1947, English trans. R. Bonanno, 1993, *Emmaus—Qubeibeh The Results of Excavations at Emmaus-Qubeibeh and Nearby Sites (1873, 1887–1890, 1900–1902, 1940–1944)*, Jerusalem.
- , 1971, *Antichi villaggi cristiani di Galilea*, SBF Coll. Min., vol. 13, Jerusalem.
- , 1979, *Antichi villaggi cristiani di Samaria*, SBF Coll. Min., vol. 19, Jerusalem.

- , 1983, *Antichi villaggi cristiani della Giudea e del Neghev*, SBF Coll. Min., vol. 24, Jerusalem.
- Bahat, D., 1991, "Topography and Toponymy [of Jerusalem]. Crusader Period," in J. Prawer and H. Ben-Shammai (eds.), *The History of Jerusalem*, Jerusalem (Hebrew), pp. 68–119.
- Barley, M.W., 1977, *European Towns: Their Archaeology and Early History*, London.
- , 1986, *Houses and History*, London.
- Bazzana, A., 1992, *Maisons d'al-Andalus: Habitat medieval et structures du peuplement dans l'Eapagne Orientale*, Madrid.
- Behrens-Abouseif, D., 1989, *Islamic Architecture in Cairo*, Leiden, New York, Copenhagen, Cologne.
- Bemis, A., J. Burchard, 1933, *The Evolving House*, Cambridge.
- Bennett, H.S., 1969, *Life on an English Manor*, Cambridge.
- Ben-Tor, A., A. Rosenthal, 1978, "The First Season of Excavations at Tel Yoqne'am, 1977", *IEJ* 28, pp. 57–82.
- Ben-Tor, A., Y. Portugali, M. Avissar, 1979, "The Excavations at Tel Yoqne'am, 1978", *IEJ* 29, pp. 65–72.
- Ben-Tor, A., M. Avissar, Y. Portugali (eds.), 1996, *Yoqne'am I. The Late Periods*, *Qedem Reports* 3. Jerusalem.
- Benvenisti, M., 1970, *The Crusaders in the Holy Land*, Jerusalem.
- , 1982, "Bovaria-Babriyya: A Frankish Residue on the Map of Palestine", in B.Z. Kedar, H.E. Mayer, R.C. Smail, eds., *Outremer. Studies in the History of the Crusading Kingdom of Jerusalem*, Jerusalem, pp. 130–52.
- Beresford, M.W., 1967, *New Towns in the Middle Ages: Town Plantation in England, Wales and Gascony*, New York.
- Beresford, M.W., J.G. Hurst, 1971, *Deserted Medieval Villages*, Gildford.
- , 1990, *Wharram Percy. Deserted Medieval Village*, London.
- Birger Troedsson, C. 1959, *The Growth of the Western City during the Middle Ages*, Göteborg.
- Boas, A.J., 1995, *Domestic Architecture in the Frankish Kingdom of Jerusalem*, Ph.D. Dissertation, The Hebrew University of Jerusalem (Hebrew).
- , 1996, "A Recently Discovered Frankish Village at Ramot Allon, Jerusalem" in M. Balard, ed., *Autour de la Première Croisade. Actes du Colloque de la Society for the Study of the Crusades and the Latin East (Clermont-Ferrand, 22–25 juin 1995)*, Paris, pp. 583–94.
- , 1997, "A Rediscovered Market Street in Frankish Acre", *Atiqot* 31, pp. 181–86.
- , 1998, "Survey of Crusader Structures in Caesarea", *ESI* 17, pp. 77–79.
- , 1999a, "Survey of Frankish Buildings", *ESI* 19, pp. 95–96.
- , 1999b, *Crusader Archaeology*, London, New York.
- , 2001, *Jerusalem in the Time of the Crusades*, London, New York.
- , 2003, "Street Villages and Rural Estate Centres: The Organization of Rural Settlement in the Latin Kingdom of Jerusalem", in A.M. Maeir, S. Dar, Z. Safrai, eds., *The Rural Landscape of Ancient Israel*, *BAR International Series* 1121, Oxford.
- , 2006, "L'architecture civile franque à Césarée, Acre et Jérusalem", *Bulletin Monumental* 164–1, pp. 31–44.
- , 2006, *Archaeology of the Military Orders: A Survey of the Urban Centres, Rural Settlements and Castles of the Military Orders in the Latin East (c. 1120–1291)*, London and New York.
- Braudel, F., 1979, *The Structures of Everyday Life. Civilization & Capitalism 15th–18th Century*, vol. 1, trans. S. Reynolds, Paris.
- Braun, H., 1951, *An Introduction to English Medieval Architecture*, London.
- Le Bruyn, C. 1698, *Voyage au Levant, c'est-à-dire, dans les principaux endroits de l'Asie mineure, dans les îles de Chio, Rhodes, Chypre, &c... dans les plus considerables villes d'Egypte, Syrie, & Terre Sainte*, Paris, 1725.

- Buchthal, H., 1957, *Miniature Painting in the Latin Kingdom of Jerusalem*, Oxford.
- Burgoyne, M.H., 1987, *Mamluk Jerusalem. An Archaeological Study*, London.
- Cahen, C., 1950–1951, “Notes sur l’histoire des croisades et de l’Orient latin, 2: Le regime rural au temps de la domination franque”, *Bulletin de la Faculté des lettres de Strasbourg*, 29, pp. 286–310.
- Canaan, T., 1933, *The Palestinian Arab House*, Jerusalem.
- Cartledge, J., 1986, “Faunal Remains”, in D. Pringle, *The Red Tower*, London, pp. 176–86.
- Chehab, M.H., 1979, *Tyr à l’époque des croisades*, BMB 31, Paris.
- Chapelet, J., R. Fossier, 1980, *Le village et la maison au Moyen Âge*, Paris.
- Clarke, H.B., A. Sims, 1985, *The Comparative History of Urban Origins in Non-Roman Europe*, BAR International Series 255 (ii).
- Clermont-Ganneau, C., 1899, “Introductory Remarks on the Distinctive and Specific Character of Crusader Masonry”, in C. Clermont-Ganneau, *Archaeological Researches in Palestine*, vol. 1, pp. 1–47.
- Conder, C.R. and H.H. Kitchener (1881–3), *The Survey of Western Palestine*, 3 vols., London.
- Coulton, G.G., 1947, *Medieval Panorama*, Cambridge.
- Davidson, G.R., 1952, “The Minor Objects”, *Corinth XII*, Princeton, N.J.
- Demains d’Archimbaud, G., 1980, *Les fouilles de Rougiers*, Paris.
- De Vaux, R., A.M. Stéve, 1950, *Fouilles à Qaryet el-‘Enab, Abu-Ghosh, Palestine*, Paris.
- Dichter, B., 1973, *The Maps of Acre, Akko*.
- , 1993, *The Old City of Akko: A Reanalysis and Conclusions 1993*, Akko (Hebrew).
- Duby, G. (ed.), 1975, *Histoire de la France rurale*, vol. 1, Seuil.
- , 1988, *A History of Private Life*, vol. 2, trans. A. Goldhammer, Cambridge, Mass., London.
- , 1991, *France in the Middle Ages 987–1460*, trans. J. Vale, Oxford, Cambridge, Mass.
- Dyer, C.C., 1986, “English Peasant Buildings in the Middle Ages”, *Medieval Archaeology* 30, 1986, pp. 19–45.
- , 1989, *Standards of Living in the Later Middle Ages*, Cambridge.
- Edgington, S., 2005, “Administrative Regulations for the Hospital of St John in Jerusalem dating to the 1180s”, *Crusades* 4, pp. 21–37.
- Ellenblum, R., 1986, *Construction Methods in Crusader Palestine*, M.A. Thesis, The Hebrew University of Jerusalem (Hebrew).
- , 1991, *Frankish Rural Settlement in Palestine in the Crusader Period*, Ph. dissertation, The Hebrew University in Jerusalem (Hebrew).
- , 1992, “Construction Methods in Frankish Rural Settlements”, in B.Z. Kedar (ed.), *The Horns of Hattin*, Jerusalem.
- , 1996, “Colonization Activities in the Frankish East: The Example of Castellum Regis (Mi’ilya)”, *EHR* 111, pp. 104–22.
- , 1998, *Frankish Rural Settlement in the Latin Kingdom of Jerusalem*, Cambridge.
- Ellenblum, R., R. Rubin, G. Solar, 1996, “Khirbat al-Lawza, a Frankish Farm House in the Judean Hills in Central Palestine”, *Levant* 28, pp. 189–98.
- Enlart, C., 1899, *L’art gothique et la Renaissance en Chypre*, Paris.
- , 1928, *Les Monuments des croisés dans le royaume de Jérusalem: Architecture religieuse et civile*, vol. II, Paris.
- , 1929, *Manuel d’archéologie française depuis les temps mérovingiens jusqu’à la Renaissance*, vol. 2, Paris.
- , 1987, *Gothic Art and the Renaissance in Cyprus*, translated from French by D. Hunt, London.
- Epstein, S., 1988, “Labour in Thirteenth-Century Genoa”, pp. 114–40 in I. Malkin and R.L. Hohlfelder (eds.), *Mediterranean Cities: Historical Perspectives*, London and Totowa, N.J.

- , 1989, *Wills and Wealth in Medieval Genoa 1150–1250*, Cambridge, Mass.
- , 1991, *Wage Labour and Guilds in Medieval Europe*, Chapel Hill, N.C. and London.
- Evans, J., 1957, *Life in Medieval France*, London.
- Faulkner, P.A. 1966, "Medieval Undercrofts and Town Houses", *Archaeological Journal* 123, pp. 120–35.
- Fossier, E., 1988, *Peasant Life in the Medieval West*, Oxford.
- Frugoni, C., 2005, *A Day in a Medieval City*, trans. W. McCuaig, Chicago and London.
- Gabrieli, F., 1969, *Arab Historians of the Crusades*, Berkeley and Los Angeles.
- Gil, M., 1976, *Documents of the Jewish Pious Foundations from the Cairo Geniza*, Leiden.
- Gimpel, J., 1976, *The Medieval Machine. The Industrial Revolution of the Middle Ages*, Aldershot.
- Gies, J.F., 1981, *Life in a Medieval City*, New York.
- Goitein, S.D., 1977, "A Mansion in Fustat: A Twelfth Century Description of a Domestic Compound in the Ancient Capital of Egypt", in D. Herlihy, H.M. Miskimin, A.L. Udovich, eds., *The Medieval City*, New Haven, London, pp. 163–78.
- , 1983, *A Mediterranean Society*, vol. 4, *Daily Life*, Berkeley, Los Angeles, London.
- Grandchamp, P.G., 1994, *Demeures médiévales*, Paris.
- Grandchamp, P. G., M. Jones, G. Meirion-Jones, J.-D., Salvègue, 1997, *La ville de Cluny et ses maisons XI^e–XV^e siècles*, Paris, 1997.
- Greenhut, Z., 2008, "Underground Reservoirs from the Crusader Period and Later Remains Next to and North of the Synagogue at Moza", *Atiqot* 58 (Hebrew), pp. 135–44, English summary, pp. 73–75.
- von Grunebaum, G.E., 1961, "The Structure of the Muslim Town", in G.E. von Grunebaum (ed.), *Islam. Essays in the Nature of Growth of a Cultural Tradition*, London.
- Guérin, V., 1868, *Description géographique, historique et archéologique de la Palestine*, vol. 1, *Judée*, Paris.
- Guidoni, E., 1992, *Storia dell' Urbanistica il Duecento*, Rome, Bari.
- Heers, J., 1990, *La ville au Moyen Âge*, Paris.
- Hillenbrand, C., 1999, *The Crusades. Islamic Perspectives*, Edinburgh.
- Hirschfeld, Y., 1995, *The Palestinian Dwelling in the Roman-Byzantine Period*, Jerusalem.
- Holmes, U.T., 1952, *Daily Living in the Twelfth Century, Based on the Observations of Alexander Neckham in London and Paris*, Madison, Wisconsin.
- , 1959, "The Houses of the Bayeux Tapestry", *Speculum* 34, pp. 179–83.
- , 1977, "Life Amongst the Europeans in Palestine and Syria in the Twelfth and Thirteenth Century", in K.M. Setton, gen. ed., *A History of the Crusades*, vol. 4, Madison WI, pp. 3–35.
- Hourani, A.H., Stern, S.M. (eds.), 1970, *The Islamic City*, Oxford.
- Hubbard, R.N.L.B., J. McKay, 1986, "Medieval Plant Remains", in D. Pringle, *The Red Tower*, London, pp. 187–91.
- Jacoby, D., 1979, "Crusader Acre in the Thirteenth Century: Urban Layout and Topography", *Studi medievali* 3a serie, pp. 1–45.
- , 1982, "Montmusard, Suburb of Frankish Acre: The First Stage of its Development", in B.Z. Kedar, H.E. Mayer and R.C. Smail, eds., *Outremer. Studies in the History of the Crusading Kingdom of Jerusalem*, Jerusalem, pp. 205–17.
- , 1989, "The Rise of a New Emporium in the Eastern Mediterranean: Famagusta in the Late Thirteenth Century" in, *Studies on the Crusader States and on Venetian Expansion*, Northampton (Meletai kai hypomnemata, Hidryma archiepiskopou Makariou III, Nicosia, 1984).
- , 2005, "Aspects of Everyday Life in Frankish Acre", *Crusades* 4, pp. 73–105.

- Johns, C.N., 1934–36, “Excavations at Pilgrims” Castle, “Atlit”, QDAP 3, 4, 5.
- Kaplan, M., 1992, *Les homes et la terre à Byzance du VI^e au XI^e siècle*, Paris.
- Kedar, B.Z. (ed.), 1992, *The Horns of Hattin*, Jerusalem, London.
- , 1996, “The Frankish Period: ‘Cain’s Mountain’” in, A. Ben-Tor et al. (eds.), pp. 3–7.
- , 1997, “The Outer Walls of Frankish Acre”, *Atiqot* 31, pp. 157–80.
- , 2006a, “Les muriales d’Acre franque”, *Bulletin Monumental* 164–1, pp. 45–52.
- , 2006b, “L’enceinte de la ville franque de Jaffa”, *Bulletin Monumental* 164–1, pp. 105–7.
- , 2006c, *Franks, Muslims and Oriental Christians in the Latin Levant*, Ashgate.
- Kedar, B.Z., H.E. Mayer, R.C. Smail (eds.), 1982, *Outremer. Studies in the History of the Crusading Kingdom of Jerusalem presented to Joshua Prawer*, Jerusalem.
- Kedar, B.Z., Stern, E., 1995, “A Vaulted Street in Acre’s Genoese Quarter?”, *Atiqot* 26, pp. 105–111.
- , 2006, “Un nuovo sguardo sul quartiere genovese de Acri”, in Kedar, 2006c, Chapter XVIII. First published in *Mediterraneo Genovese: Storia e Architettura. Atti del Convegno Internazionale di Genova, 20 ottobre 1992*, ed. G. Airaldi and P. Stringa. Genova: Edizioni Culturali Internazionali Genova, 1995, pp. 11–13.
- Kesten, A., 1962, Acre. *The Old City Surveys and Plans*, Jerusalem.
- , 1993, *The Old City of Acre, Re-examination and Conclusions*, Akko.
- Kletter, R., 1996, “Jerusalem, Har Hozevim”, *ESI* 15, pp. 70–71.
- Kletter, R. and A. Boas, 2002, “Har Hozevim: A Frankish Farmhouse North of Jerusalem”, *Atiqot* 43, pp. 185–205.
- Kolska Horowitz, L. and E. Dahan, 1996, “Animal Husbandry Practices During the Historic Periods”, *Yoqne’am I, The Late Periods, Qedem Reports* 3, Jerusalem, pp. 246–55.
- Kool, R., 1997, “The Genoese Quarter in Thirteenth Century Acre: A Reinterpretation of its Layout”, *Atiqot* 31, pp. 187–200.
- Lapidus, I.M., 1970, “Muslim Society in Mamluk Syria”, in *The Islamic City*, eds. A.H. Hourani and S.M. Stern, Oxford, pp. 195–202.
- Latron, L., 1936, *La vie rurale en Syrie et au Liban*, Memoires de l’Institut francais de Damas, Beirut.
- Legauy, J.P., 1984, *La rue au Moyen Âge*, Rennes.
- Le Goff, J., 1980, *La ville médiévale*, Histoire de la France urbaine, vol. 2, Paris.
- Le Roy Ladurie, E., 1984, *Montaillou*, trans. B. Bray, Harmondsworth.
- Lloyd, D.W., 1984, *The Making of English Towns*, Over Wallop.
- Lloyd, N., 1975, *A History of the English House*, London, New York.
- Luke, H.C., J. Garstang, 1929, *The Traveller’s Handbook for Palestine and Syria*, London.
- Lyons, M.C. and D.E.P. Jackson, 1997, *Saladin. The Politics of Holy War*, Cambridge.
- Major, B., 2007, “The Rural Site of ‘Āsūr” in P. Edbury and S. Kalopissi-Verti eds., *Archaeology and the Crusades: Proceedings of the Round Table, Nicosia, 1 February 2005*, Athens, pp. 157–71.
- Mallett, M., D. Whitehouse, 1967, “Castel Porciano: An Abandoned Medieval Village of the Roman Campagna”, *Papers of the British School at Rome* 35, pp. 113–46.
- Matson, G.O., 1946, *The Palestine Guide*, (5th Edition), Jerusalem.
- May, N., 1999, “Jerusalem, Har Hozevim” *ESI* 19, pp. 56–58.
- , 2000, “A Crusader Period Farmhouse at Har Hozvim, North of Jerusalem”, *Qadmoniot* 33, 1(119), pp. 40–45.
- Metcalf, D.M., 1995, *Coinage of the Crusades and the Latin East*, London, 1995.
- Michell, G., 1978, *Architecture of the Islamic World*, London.
- Miller, E., J. Hatcher, 1978, *Medieval England—Rural Society and Economic Change*, New York.
- Mitchell, C.F., G.A. Mitchell, 1908, *Brickwork and Masonry*, London.

- Mitchell, P.D., 2004, *Medicine in the Crusades*, Cambridge.
- Niermeyer J.F. and C. Van de Kieft, 2002, *Mediae Latinitatis Lexicon Minus*, 2 vols., Leiden, Boston.
- Oikonomides, N., 1990, "The Contents of the Byzantine House", *DOP* 44, pp. 205–14.
- Onn, A., Y. Rapuano, 1995, "Jerusalem, Khirbat el-Burj", *ESI* 14, pp. 88–90.
- Pantin, W.A., 1962–1963, "The Merchants' Houses of King's Lynn", *Medieval Archaeology* 6–7, pp. 173–81.
- , 1962–1963, "Medieval English Town House Plans", *Medieval Archaeology* 6–7, pp. 202–33.
- Peilstöcker, M., 2006, "La ville franque de Jaffa à la lumière des fouilles récentes", *Bulletin Monumental* 164–1, pp. 99–104.
- Peters, F.E., 1985, *Jerusalem*, Princeton.
- Pierotti, P., 1987, *Pisa e Accon*, Pisa.
- Pirenne, H., 1972, *Economic and Social History of Medieval Europe*, London.
- Platt, C., 1976, *The English Medieval Town*, London.
- Porat, Y., 1986, "Nethanya ('Umm Khalid)", *ESI* 5, pp. 85–86.
- Porée, B., 1995, "Les moulins et fabriques a sucre de Palestine et de Chypre", in N. Coureas and J. Riley-Smith (eds.), *Cyprus and the Crusades. Papers given at the International Conference 'Cyprus and the Crusades', Nicosia, 6–9 September 1994*, Nicosia, pp. 377–510.
- Prawer, J., 1972, *The Latin Kingdom of Jerusalem. European Colonialism in the Middle Ages*, London.
- , 1980, *Crusader Institutions*, Oxford.
- Preston, H.G., 1903, *Rural Conditions in the Latin Kingdom of Jerusalem during the 12th and 13th Centuries*, Ph.D thesis, University of Pennsylvania, Philadelphia.
- Pringle, D., 1881, "Some Approaches to the Study of Crusader Masonry Marks in Palestine", *Levant* 13, pp. 173–99.
- , 1983, "Two Medieval Villages North of Jerusalem: Archaeological Investigations in al Jib and ar Ram", *Levant* 15, pp. 141–77.
- , 1985, "Magna Mahumeria (al Bira): The Archaeology of a Frankish New Town in Palestine", in P.W. Edbury, ed., *Crusade and Settlement*, Cardiff, pp. 148–68.
- , 1986, *The Red Tower (al-Burj al-Ahmar): Settlement in the Plain of Sharon at the Time of the Crusaders and Mamluks, A.D. 1099–1516*, London.
- , 1991a, "Crusader Jerusalem", *BAIAS* 10 (1990–1), pp. 105–13.
- , 1991b "Survey of Castles in the Crusader Kingdom of Jerusalem, 1989: Preliminary Report", *Levant* 23, 1991, pp. 87–88.
- , 1992, "Aqua Bella: The Interpretation of a Crusader Courtyard Building", in B.Z. Kedar, ed., *The Horns of Hattin*, Jerusalem.
- , 1993, 1998, 2007, *The Churches of the Crusader Kingdom of Jerusalem*, 3 vols., Cambridge.
- , 1994, "Burj Bardawil and the Frankish Settlement North of Ramalla in the Twelfth Century", in *The Frankish Wars and their Influence on Palestine. Selected Papers Presented at Birzeit University International Academy Conference held in Jerusalem, March 13–15, 1992*, vol. ed. K. Athamina and R. Peacock, Birzeit.
- , 1997, *Secular Buildings in the Crusader Kingdom of Jerusalem. An Archaeological Gazetteer*, Cambridge.
- Rheidt, K., 1990, "Byzantinische Wohnhäuser des 11. bis 14 Jahrhunderts in Pergamon", *DOP* 44, pp. 195–204.
- Richard, J., 1985, "Agricultural Conditions in the Crusader States", in K.M. Setton (ed.), *A History of the Crusades*, vol. 5, Madison, pp. 251–94.
- Riley-Smith, J., 2005, *The Crusades*, London.
- , 1973, *The Feudal Nobility and the Kingdom of Jerusalem*, London.
- Rogers, J.M., 1970, "Samarra: A Study in Medieval Town Planning", in A.H. Hourani and S.M. Stern, eds., *The Islamic City*, Oxford, pp. 119–55.

- Roll, I., E. Ayalon, 1989 *Apollonia and Southern Sharon*, Tel Aviv, (Hebrew).
- , 1993, "Apollonia-Arsuf", in E. Stern, ed., *NEAEHL*, vol. 1, pp. 72–75, Jerusalem.
- Rozenberg, S. (ed.), *Knights of the Holy Land*, Jerusalem.
- Rosener, W., 1992, *Peasants in the Middle Ages*, trans. A. Stutzer, Oxford.
- Roux, S., 1976, *La maison dans l'histoire*, Paris.
- Rowley, T., J. Wood, 1995, *Deserted Villages*, Princes Risborough.
- Rowling, M., 1968, *Everyday Life in Medieval Times*, New York.
- Russell, D., 1962, *Medieval Cairo*, London.
- Saalman, H., 1968, *Medieval Cities*, New York.
- Sabine, E.L., 1934, "Latrines and Cesspools of Medieval London", *Speculum* 9, pp. 303–21.
- Saller, S.J., 1957, *Excavations at Bethany (1949–1953)*, Jerusalem.
- Salzman, L.F., 1952, *Building in England Down to 1540*, Oxford.
- Sawyer, P.H., ed., 1976, *Medieval Settlement*, London.
- Scanlon, G.T., 1970, "Housing and Sanitation", in A.H. Hourani and S.M. Stern, eds., *The Islamic City*, Oxford, pp. 179–94.
- Scanlon, R.L., 1957, *Medieval Architecture in the Central Area of Corinth (= Corinth 16)*, Princeton.
- Schofield, J., 1994, *Medieval London Houses*, New Haven and London.
- Schofield, J., A. Vince, 1994, *Medieval Towns*, London.
- Shaefer, K.R., 1985, *Jerusalem in the Ayyubid and Mamluk Eras*, Ann Arbor, MI.
- Sigalos, E., 2004, *Housing in Medieval and Post Medieval Greece*, Oxford.
- Sion, O., 1992, "Khirbet 'Abu Suwwana—An Arab Settlement from the Umayyad Period", *Qadmoniot* 97–98 (Hebrew), pp. 53–57.
- Small, R.C., 1956, *Crusading Warfare 1097–1193*, Cambridge.
- Stenton, D.M., 1983, *English Society in the Early Middle Ages*, Harmondsworth.
- Stern, E., 2006, "La commanderie de l'Ordre des Hospitaliers à Acre", *Bulletin Monumental* 164–1, pp. 53–60.
- Stern, E.J., 1999, "Ceramic Ware from the Crusader Period", in S. Rozenberg, ed., *Knights of the Holy Land. The Crusader Kingdom of Jerusalem*, Jerusalem, pp. 259–65.
- , 2001, "The Excavations at Lower Horbat Manot: A Medieval Sugar-Production Site", *Atiqot* 42, pp. 277–308.
- Suriano, F., 1900, *Il trattato di Terra Santa dell'Oriente*, ed. G. Golubovich, Milan.
- Syon, D., A. Thatcher, 2000, "Akko, Ha-Abirim Parking Lot", *ESI* 20, pp. 11–16.
- Thénaud, J., 1884, *Le Voyage d'Outremer*, Paris.
- Thompson, E.J.W., 1959, *Economic and Social History of the Middle Ages*, New York.
- Tushingham, A.D., 1985, *Excavations in Jerusalem 1961–1967*, Toronto.
- Vance, J.E., 1977, *This Scene of Man*, New York.
- Viollet le Duc, M., 1868, "Cheminée", in *Dictionnaire raisonné de l'architecture française du XI^e au XVI^e siècle*, vol. 3, Paris, pp. 194–217; "Maison" in vol. 6, pp. 214–300; "Manoir" in vol. 6, pp. 300–16.
- Warren, J., Fethi, I., 1982, *Traditional Houses in Baghdad*, Horsham.
- Whitehouse, D., 1970, "Excavations at Satriano: a Deserted Medieval Village in Basilicata", *Papers of the British School at Rome* 38, pp. 188–219.
- , 1971, "The Houses of Siraf, Iran", *Archaeology* 24, pp. 255–62.
- Wickham, C., 1981, *Early Medieval Italy*, Totowa, N.J.
- Wood, M., 1950, "Thirteenth Century Domestic Architecture in England", *The Archaeological Journal* 105, London.
- , 1965, *The English Medieval House*, London.
- Ziadeh, N.A., 1953, *Urban Life in Syria under the Early Mamluks*, Beirut.

INDEX

- abaci 36
 Abbasids/Abassid Period 22, 27
 ablaq 58, 61, 68, 246, 271, 274 n. 16
 Abu Ghosh (Emmaus) 66, 113, 120, 159, 178, 332
 Abu Suwwana, Kh. 26, 29
 Acre 4, 5 n. 16, 6, 6 n. 17, 7, 13, 13 n. 2, 42, 43, 51, 52, 53, 54, 55 n. 35, 58, 59, 61, 64, 67, 68, 69, 70, 71, 71 n. 3, 72, 74, 75, 77, 78, 79, 80, 82, 88, 89, 111, 112, 115, 116, 127 n. 5, 128 n. 21, 133, 134, 138, 141, 142, 144, 145, 145 n. 95, 146, 150, 151, 152, 155, 156, 157, 162, 164, 169, 171, 172, 173, 174, 175, 177, 178, 184, 186, 189, 191, 193, 199, 201–2, 203, 207 n. 1, 208, 209, 211, 212, 215, 218, 223, 227, 230, 231, 232, 233, 235, 236, 237, 239, 243, 247, 249, 251, 252, 254, 255, 256, 257, 261, 262–90, 308, 309, 312, 313, 353; Burgus Templi 157, 216; castellum 75; port of 36; Genoese Quarter 150, 151, 155, 192, 193, 216, 267, 270, 272, 275, 280, 281, 282, 283, 284, 285, 286, 288, 290; Great Palace of Fondaco 81, 192, 233, 235, 236, 253; harbour 161, 189, 218, 262, 284; Hospitaller Quarter 74, 77, 78, 212, 234; monastery of St. Catherine 157; Montmusard 152, 157, 187, 202 n. 7, 208, 212, 215, 216, 273; palace of the bailli 52, 79, 81, 115, 192, 235, 239, 253; Patriarch's Quarter 208; Pisan Quarter 192, 234 n. 41, 276, 277, 278; Porta St. Johannis 77; Rectangular Quarter 209, 256, Street of Bethlehem 212; Street of the Butchers 138, 157; Street of the Cooking Pot Makers 52, 211; Street of Saphoria 212; Templar Quarter 36, 212, 275, 284; Via Cooperta 155, 212, 270, 284
 Adela of Blois 66 n. 60
 Aden 229
 Aegean region 144
 Afghanistan 27, 29
 'Ain el-Haramiyeh 342
 'Ain Salman 101 n. 76
 Aithara 324
 Akhziv 8, 9, 203
 al-Amir, Fatimid Caliph 221
 al Aqsa Mosque (see also Jerusalem-Templum Salomonis) 72
 al-Ashraf, Sultan 292
 al-Manata, Kh. 37
 al-Mu'azzam 'Isa 74, 292
 alcoves 271
 Aleppo 229
 Aleppo pines 41
 Alexander Ariosto 323
 Alexandria 141, 229, 232
 Algeria 26
 al-Babariyya/al-Baubariya 155, 342
 al-Baina (Dair al-Asad) 121
 al-Bira (see Magna Mahumaria) 91, 329, 330
 al-Burj, Kh. 101 n. 76, 105, 105 n. 87, 114, 193, 259, 321, 322, 341, 349, 350–51
 al-Kāmil, Sultan 312
 al-Kurum 9, 36, 47, 49, 91, 93, 105, 118, 123, 140, 140 n. 73, 147, 152, 167, 168, 175, 176, 180, 192, 193, 195, 202, 212, 297 n. 27, 321, 322, 323, 325, 326, 328, 330, 331, 333, 349, 350
 Allar as-Sufla (H. Tannur) 113
 al-Mina (port of Antioch) 144
 al-Mu'azzam 'Isa 292
 al-Nāsir al-Daud of Kerak 74
 aloe 135
 alum 135
 Amaury, King of Jerusalem 73, 254, 332
 Ambroise 134, 158, 177
 amphorae 141, 141 n. 86, 193
 ampulae 152
 Angers (France) 254
 Anonymous of 1480 323
 Anonymous of the Rhine II 323
 Antaradus 140
 anterooms 348
 Antioch 11, 66, 71, 128, 140, 144, 146, 185 n. 10, 186, 188; bathhouses 188; principality of 12
 apartments 80, 91, 84

- apartment buildings 244
 apples 133, 134
 apse 108, 337
 Aqua Bella ('Ain Hemed) 47, 48, 50,
 108, 109, 116, 118, 154–55, 179, 200
 n. 1, 201, 247, 259, 316, 337–38
 aqueducts 183, 299
 Arabic 196
 arcades 75
 arches 55, 278, 287, 288, 295, 298, 300,
 320, 329, 358
 Armathem 324
 Armenians 207
 Armotie 323
 army 5, 100
 Arnutiya 324
 Arrajan 27
 ar-Ram (Aram) 100, 110, 153, 201,
 247, 259, 324, 338–40, 341
 arrises 88, 275
 arrow slits 55, 107, 111, 353
 Arsenal Bible 137
 arsenic 135
 Arsur 9, 34, 41, 45 n. 24, 52, 54, 70,
 124, 124 n. 4, 125, 130, 159, 251, 261,
 290–92, 305
 Artas 183
 artichokes 133
 Ascalon 45 n. 24, 92, 134 n. 37, 180,
 208
 ash 123, 292
 ashlar 7, 29, 36, 37 n. 10, 51, 57, 78,
 88, 92, 96, 101, 102, 103, 130, 177,
 246, 287, 289, 296, 300, 303, 305, 314
 n. 63, 325, 329, 333, 336, 344, 345,
 350, 351, 352, 355, 357, 358
 Ashtor, Eliyahu 225, 228
 Asia Minor 228, 229
 asparagus 133
 aspic 135
 Asūr 11
 Athens 18, 19, 19 n. 23
 auberge 118, 186, 187
 Augustinians 90, 121
aula regis 72
 Avigad Nahman 313
 axe 64
 Ax-les-Thermes 185
 Ayyubids/Ayyubid Period 23, 312, 332,
 334, 345
 Bāb al-Futūh, Cairo 68
 Bāb as-Silsila 86
bacini 52, 282, 284
 Badr al-Dīn 86
 Bagatti, Bellarmino 6, 90, 333, 334, 356
 Baghdad 28
 bailiff 186
 Baisan (Beth She'an) 22, 44, 138, 215
 n. 2
 Bait Ikṣa 321, 322, 351
 Bait Hanina 332
 Bait Mizza, Kh. 351–52
 bakeries 108, 128–29, 133, 157–59,
 162, 186, 208, 236, 237, 238
 bakers 84 n. 47, 149
 baking 28, 123, 201
 Balian of Ibelin 302
 balcony 15, 115, 275, 288, 297, 316
 Baldwin I, King of Jerusalem 72, 135,
 290, 292, 322, 328, 330, 341
 Baldwin II King of Jerusalem 132, 322
 Baldwin III King of Jerusalem 73, 186
 bananas 133, 134
 banca (benches) 15, 17, 28, 52, 79, 93,
 95, 118, 131, 150 n. 2, 162, 191, 193,
 195, 236, 238, 239
 bannum (see monopolistic rights)
 Barka Khān 86, 86 n. 50
 barley 132, 133
 Barley, Maurice 2
 barns 108, 259
 barrels 141, 191, 225
 barrel vaults 29, 47, 55–56, 74, 76, 77,
 82, 86, 88, 92, 95, 97, 103, 105, 107,
 108, 110, 111, 112, 113, 114, 117, 174,
 175, 178, 191, 195, 204, 206, 211, 245,
 257, 258, 267, 273, 274, 279, 287, 289,
 299, 300, 314, 324, 325, 331, 333, 337,
 338, 340, 341, 342, 343, 344, 348, 350,
 351, 352, 363, 358, 360
 barrows 226 n. 16
 basalt 35, 36, 37, 130, 288
 basements 36, 76, 82, 103, 105, 107,
 117, 252
 basins 157, 333
 bathhouse/bathing/baths 7, 27, 43,
 184–88, 208, 299, 308
 Battle of Arsuf 41
 Battle of Hattin 262, 290, 302
 Baudri, Abbot of St. Pierre de
 Bourgueil 66 n. 60
 bay windows 71 n. 6
 Baybars 124 n. 4, 131, 141, 290, 292,
 354
 bazaars (see also market streets) 127,
 150
 bead moulding 319

- beakers 146, 156
 beams 289, 289 n. 19, 292
 beans 132
 Beaufort 86, 116
 Beaune 97
 bedouin 29
 bedrock 154, 175, 180, 191, 204, 212,
 257, 258, 326, 327, 338, 347, 348
 bedrooms 15, 18 n. 17, 115–21
 beds/bedding 28, 30, 89, 117, 118, 118
 n. 13 121, 162, 163, 164, 164 n. 12,
 164 n. 17, 193
 beehive lamps 172, 173
 bee-keeping 136
 beer 141, 142
 Beirut 4, 64 n. 55, 68, 146, 161, 186
 Beitfutier 322
 Beitiumen 340
 Bellapais 121, 131
 bells 119
 Belmont 108, 114 n. 104, 139 n. 71,
 337
 Belus River 177 n. 50
 Belvoir 45 n. 24, 119, 123–24, 125
 n. 15, 127 n. 15, 130, 146, 152, 177,
 186, 199, 200 n. 1, 274
 benches (see banca) 17, 23, 28, 36, 38,
 52, 79, 81, 83, 93, 95, 118, 131, 150
 n. 2, 151, 161, 162, 162 n. 7, 172, 188,
 191, 193, 195, 236, 237, 238, 239, 252,
 253, 258, 326, 348
 Ben-Dov, Meir 120
 Benedictines 124, 207, 338
 Benjamin of Tudela 156, 174
 Benvenisti, Meron 196, 322, 328, 342,
 344, 353, 354, 359
 Bergamino da Bergamo 225
 Bertrand Guasc 163
 Bethaatap (Bait Itab) 101 n. 76, 107,
 110, 111, 259, 341
 Bethany 109, 113, 120, 124, 191, 338
 Bethgibelin 14 n. 3, 131, 162, 189, 341
 Bethlehem 90, 120, 139, 183
 Bethsaphace 341
 Bet Kerem Valley 334
 Bet Zanita, Horvat 203, 203 n. 1
 bezants 79, 221–28
 Bezek 139
 bins 124, 204
 Bir Zait, Kh. 111, 353
 blacksmiths 226
 Blanchegarde (Tel es-Safi) 37, 37 n. 10
 blankets 164
 blind arches 279, 359
 boars 133
 bolts 297
 bolt beams 42
 bones 202 n. 12
 Boothby Pagnel 99
 bossed ashlars 284
 bosses 112, 344, 357
 bottles 140, 141, 156
 bovaria/boverie 196
 boverel 138, 216
 brackets 16, 84, 88, 112, 121, 167, 256,
 300, 314, 316, 317, 319, 326
 braziers 28, 165
 bread 99 n. 74, 123, 133, 134, 142, 157,
 158, 225, 349
 Brescia 225
 brick 18 n. 17, 21, 23, 28, 43, 124
 Britain 97, 359
 British Mandate 330
 British School of Archaeology in
 Jerusalem (BSAJ) 9, 293
 Brittany 165
 Broadhouse 350
 brothels (bordello) 185, 185 n. 10
 Bubil 322
 building materials 241
 Burchard of Mount Zion 133, 134,
 136, 139–40, 324 n. 86
 Burg Bardawil 100, 118, 179, 259, 321,
 342–43
 Burj as-Sahl 111
 burgage plots 14, 15, 69, 71, 150, 244,
 249, 327
 burgage tenure 15
 Burgoyne, Michael 86, 87, 317
 Burgundy 34, 97
burgus novus 13 n. 2, 215, 263
 burials 218
 Bury St. Edmunds 34
 bustans 202
 butchers 138, 149, 157, 208, 218
 butter 133
 buttresses 20, 112, 131
 byres 195
 Byzantine Empire 13, 144
 Byzantine Period 4, 42, 172, 305, 357
 cabbages 133, 135
 Caesarea 5, 6, 8, 9, 45 n. 24, 51, 54,
 55, 60, 64, 69, 87, 109, 118, 151, 156,
 172, 174, 179, 184, 190, 192, 193, 194,
 196, 197, 201, 212, 213, 247, 249, 251,
 256, 261, 262, 292–302, 312, 326, 338;
 harbour 292

- Cairo 21, 68, 71, 225, 228, 229, 273
 n. 14
 Calandria 324
 Cambrai Map of Jerusalem 52, 73, 74
 camels 139 n. 71, 195, 195 n. 6
 camera 117
 camphor 135
 candelabra 173
 candles 136, 171
 Canterbury 184 n. 7
 capitals 35, 58, 76, 89, 121, 271, 316
 Carmel 35
 Carmelites 208
 carpenters 41 n. 12, 42, 47, 226 n. 16,
 226 n. 16, 227
 carobs 41, 133, 134, 135
 carrubium 212, 234, 234 n. 41
 carrucates 327–28, 328 n. 94, 338
 carvers 29
 casa 80 n. 32
 casalia 31, 302
 Casel Imbert (Akhziv) 328
 Castel 351
 castellan 75
 Castellare Rogerii Longobardi 343
 Castellum Beroardi 45 n. 24
 Castellum Regis 87, 203, 257
 castles 1, 2, 5 n. 16, 17, 18, 33, 44, 45,
 64, 79, 86, 92, 100, 100 n. 75, 108,
 116, 117, 125, 133, 157, 158, 162, 166,
 186, 306, 342, 345, 355, 356
 Cathedral of the Holy Cross, Acre 77
 Cathedral of St. Sophia, Nicosia 52,
 319
 Cathedral of St. Nicholas,
 Famagusta 75, 77
 cats 139 n. 71, 202 n. 12
 cattle/cattle market 135, 138, 139
 n. 71, 157
 cauldrons 125 n. 7
 Cave of Mahpelah 344
 Caymont (Yoque'am) 9, 51, 52 n. 31,
 54, 70, 146, 159, 180, 181, 201, 211,
 249, 251, 261, 262, 292, 302–6
 ceilings 3, 66, 130, 331
 celadon 145 n. 95
 cellars 191, 250, 326
 cementarius 45
 cemetery 131, 208, 279, 306, 323
 ceramics (see also pottery) 3, 62, 143,
 204, 242, 244, 258, 289, 352
 cesspool/cesspit 178, 179, 180
 chains 5 n. 16, 189, 256 n. 33
 chairs 28, 161
 chalk 253
 chamber pots 258
 chamfered arrises 300
 channels 64, 113, 123, 157, 179, 180,
 303, 326, 327
 chapel 3, 72, 76, 108, 114, 116, 119,
 120, 337, 359, 360
 chapter house 113, 120
 charcoal 109, 338, 345
 Chastiau Pelerin ('Atlit Castle) 7, 37,
 45 n. 24, 64, 86, 117, 119, 124, 131,
 145, 146, 186, 187, 193, 249, 251, 261,
 306–8
 Chateau Blanche 119
 cheese 142, 258
 cherries 134
 Chester 324 n. 90
 chick peas 132
 chickens/hens/chicken coops 95, 129
 n. 26, 133, 137, 138, 139 n. 71, 202,
 225
 children 200
 chimneys 17, 18, 19, 19 n. 22, 124,
 159, 164–71, 243, 250, 258, 325, 326
 chip and rubble/chip and mortar 257,
 336, 344, 345, 353
 chisels 64
 choppers 127
 Christmas 143
 Church 262
 churches 1, 3, 33, 44, 45, 66, 79, 87,
 89, 90, 119, 121, 131, 191, 203, 208,
 300, 311, 322, 330, 338, 359
 Church of Annunciation, Nazareth 36
 n. 9, 90
 Church of Ascension 89
 Church of San Lorenzo, Acre 270
 Church of St. Anne, Jerusalem 89,
 207
 Church of the Holy Sepulchre 36 n. 9,
 72, 73, 89, 113, 134, 136, 152, 159,
 172 n. 40, 173 n. 41, 313, 322, 323,
 329–30, 332, 338, 340, 341
 Church of St. John, Acre 43, 78 n. 27
 Church of St. Lawrence, Acre 155
 Church of St. Lazarus, Bethany 113
 Church of St. Mary Latin,
 Jerusalem 81, 89
 Church of St. Mary Major,
 Jerusalem 89
 Church of St. Mary of Mount Zion,
 Jerusalem 89
 Church of St. Mary in Jehoshaphat,
 Jerusalem 89

- Church of Nativity, Bethlehem 90,
 120, 162 n. 4
 Church of St. Peter, Caesarea 292
 Church of St. Peter in Chains,
 Jerusalem 187
 Church of St. Thomas, Jerusalem 317
 chutes/shafts 117, 124, 169, 178, 179,
 275, 287, 300, 342
 Ciggaar, Krijnie 1
 cinnamon 133, 135
 Cistercians 114, 359
 cisterns 6, 23, 27, 64, 82, 93, 97, 101,
 105, 108, 111, 113, 118, 123, 124, 174,
 175, 188, 201, 202, 204, 206, 251, 252,
 258, 271, 289, 299, 300, 322, 326, 327,
 353, 356, 358
 citadel 74
 citrus 134
 Claus van Duesen 323
 clay floors 314
 Clepsta (Lifta) 154
 Clermont-Ganneau, Charles 169
 climate 200 n. 2, 241, 247
 cloisters 77, 90, 113, 120, 121, 178, 199
 clothing 3, 118, 175, 187, 193, 317
 cloves 135
 Cluny 34, 150 n. 2, 245
 Clustered columns 131
 cobblers (see also shoemakers) 149
 cobbles 292, 331
 coins 3, 289, 334
 columbaria 327
 columns 36, 119, 162, 316
 communal courtyard 283
 Conder, Claud 167, 295
 conduit 82
 conserves 134
 consoles 271, 288
 constable 75
 Constantinople 18
 cooks/cooking/cooking utensils 28, 93,
 123, 125, 126, 126 n. 9, 127, 128, 129,
 149, 152, 156, 187, 193, 251, 201, 299
 cooking areas 180
 cooking pot makers 149
 Copts 207
 Cordate (Catalan knight) 31
 corbels 36, 52, 117, 290
 core 109
 coriander 133
 Corinth 18, 19
 corn 338
 Cornelius Le Bruyn 78
 corridor 23
 courtyard/courtyard house 7, 8, 16–17,
 18, 19, 20, 21–22, 24, 25–26, 29, 47,
 64, 69, 71, 76, 79, 83, 90, 91, 95, 96,
 97, 107, 108, 110, 111, 112, 113, 114,
 120, 137, 138, 149, 150, 180, 191,
 199–202, 204, 206, 215, 242, 243, 244,
 249, 250, 251, 265, 266, 267, 270, 271,
 272, 273, 274, 275, 277, 278, 279, 281,
 282, 284, 285, 286, 287, 288, 289, 292,
 295, 296, 297, 299, 303, 305, 308, 312,
 337, 339, 341, 342, 342, 345, 352, 353,
 356, 359, 360
 covered streets 55, 191, 212, 213, 284,
 288, 295, 298, 309, 317
 crabs 137
 Crac des Chevaliers 7 n. 21, 58, 58
 n. 44, 124, 149, 158, 159 n. 33, 179,
 179 n. 57, 199–200 n. 1, 243
 crane 65
 crenellated roof 82
 crockets 117
 crofts 175, 202
 crops 330, 338
 crosses 7, 67, 152
 crowding 70
 crowns 117
 crusades 18, 89
 crypts 113
 cucumbers 135
cul-de-sac 14
 cumin 133
 cupboards 28, 31, 93, 96, 103, 114,
 193, 194, 288, 298, 326, 339
 curia 129, 322, 330, 331, 355, 356
 curia regis 73, 74
 curtile (see farms/farmhouses)
 Cyprus 11, 34, 41, 52, 65, 66, 67, 71,
 75, 76, 112, 121, 127, 136, 140, 144,
 155, 179, 219, 231, 246, 308, 319
 Cypriot Department of Antiquities 75
 Dair al-Asad 84 n. 48
 dairy produce 133
 Damascus 206, 222
 Daniel of Kiev, Abbot 134, 135, 136,
 324, 324 n. 85
 Dapper O. 65
 dār 25
 dates 133
 Dean, Bashford 120
 debesh (see also chip and mortar) 29,
 31, 45, 204, 333, 336
 decoration 24, 33, 34, 36, 51, 52, 58,
 64, 65, 83

- deer 133, 139 n. 71
 Deir Samit 31
 Deir Yasini 35
 demesne 99
 Deschamps, Paul 159
 Detroit 37
 diagonal tooling 8, 40, 84, 96, 103,
 108–9, 177, 196, 243, 245, 263, 267,
 282, 28, 305, 314, 314 n. 63, 316, 325,
 333, 336–37, 338, 347, 357, 358
 dice 141
 dihliz 23
 dinar 221, 222, 223, 224, 227
 dining rooms (see also refectories) 123
 Diocletian's Palace 68
 dirhem 222
 dispensator (locator) 356
 ditchers 26 n. 16
 dogs 139 n. 71, 202 n. 12
 dolomite 35
 domestic animals 202, 217
 Dominicans 89, 208
 domus 12, 16, 80 n. 32
 donkeys 79, 195 n. 6
 doors 5, 15, 16, 18 n. 17, 2, 28, 31, 34,
 40, 42, 47, 58, 62, 65, 78, 82, 83, 86,
 88, 95, 96, 101, 102, 108, 109, 110,
 112, 113, 114, 115, 116, 119, 124, 131,
 132, 191, 193, 204, 258, 263, 267, 20,
 271, 273, 274, 279, 282, 284, 288, 289,
 290, 296, 298, 300, 303, 309, 314, 316,
 319, 320, 325, 327, 333, 334, 335, 338,
 339, 340, 341, 344, 345, 347, 348, 349
 door bolts 273, 297
 door jambs 84, 3, 105, 306–8, 325, 337,
 350
 doorkeeper 21
 doorposts 42, 62–67, 257, 296, 297,
 314, 347, 348
 door steps 257
 Doq 112, 112 n. 98
 dormitory 3, 90, 10, 13, 118–21, 131,
 178, 179
 Dotan, Moshe 36
 double windows 58
 drainage/drains 4, 22, 27, 28, 64, 123,
 124, 338
 drapers 149
 drawbridge 83
 dress makers 149
 dressing room 187
 drip moulding 58, 62, 309
 drums 186
 duck 139 n. 71
 dyeing, dyers 156, 226
 Duncan J. 7
 Dust 58, 64
 earthquakes 22
 eating/eating utensils 2, 143–47, 186
 Edessa (city and Principality) 11, 71
 eggs 133, 138, 142
 Egypt 20, 27, 64 n. 55, 136, 144, 146,
 158, 161, 162, 206, 224, 226, 227, 228,
 229, 231, 232, 235, 239
 el Joz 351
 Eleanor, Queen 216 n. 7
 Ellenblum, Ronnie 90, 159, 358
 embrasures 83, 88, 115, 250, 300, 317
 Emmaus 107, 351
 en Kerem 113
 enclosures 349
 England 13, 15, 17, 65, 99, 158, 16
 n. 20, 166, 226 n. 16
 Enlart, Camile 11, 34, 65, 66, 67, 76,
 77, 169, 179, 262, 319, 320
 Epstein, Stephen 224, 27, 227 n. 18,
 228
 escutcheons 320
 Eustace Garnier 292
 Eustorgius of Montaigu 66, 76
 exchange 84 n. 47, 137
 exchange rates 221
 facades 14, 15, 16, 33, 51, 66, 74, 76,
 78, 86, 241, 270, 296, 309, 316, 317,
 320
 faddan 'arabi 327–28
 Famagusta 11, 55, 66, 70, 75, 76, 169,
 212, 261, 262, 308–9
 farms/farmhouses 40, 42, 93–97, 116,
 154, 162, 175, 193, 208, 247, 336, 342,
 349, 351, 353, 359
 Fatimid Period/Fatimids 5, 22, 23, 92,
 174, 192, 296
 fatwa 27
faubourg 7, 8, 13, 78, 157, 186, 187,
 208, 215, 249, 251, 306, 308
 Fayyumi, al- 228
 Felix Fabri 72, 73
 fennel 133
feuda 330
 fields 330
 fieldstones 22, 29, 36, 83, 92, 103, 105,
 202, 204, 258, 310, 314, 314 n. 63,
 325, 326, 336, 344, 345, 349, 357
 Figeac 169
 figs 133

- fighting platform 82
 finials 58, 319
 firebreak 34
 fireplaces 15, 18, 19 n. 22, 83, 93, 125, 164–66, 258, 326
 First Crusade 99, 217, 290
 fish/fish market 67, 133, 136, 137, 157, 218
 flags/flagstones 52, 79, 102, 204, 206, 305, 347
 flax dealers 149
 fleas 177
 fleets 309
 fleurs-de-lis 67, 77 n. 24, 83, 130
 floors 4, 19, 20, 22, 28, 29, 30, 43, 47, 52–55, 74, 92, 102, 121, 124, 130, 204, 211, 227, 250, 258, 263, 265, 289, 290, 305, 311, 314, 317, 320, 324, 326, 336, 341, 344, 347, 348, 353, 356
 Florence 16, 256
 flour, flour mills 99 n. 74, 157, 354
 flue 274, 275
 folded vaults 267
 fondaco 36
 fonde 133, 140, 144, 195 n. 6
 food 3, 123, 132, 133–39
 forests 35, 41, 41 n. 14, 216 n. 7, 217, 217 n. 9
 forges 152
 forks 146 n. 104
 fortifications 8, 131, 208, 292, 295, 303, 309
forum rerum venalium 317 n. 70
 foundations 28, 47–48, 306, 308, 336, 350
 foundation diggers 47
 fountains 21, 188–89, 201, 299
 foxes 139 n. 71
 France 13, 15, 16, 33, 97, 216 n. 7
 Francheville (Rushmia) 358
 Franciscans 7, 89, 208
 Frankel, Raphael 354
 Frankincense 135
 Frederick II 74, 75, 87, 138
 frescoes 66
 Frisia 165
 Frugoni, Arsenio 209
 fruits 133, 134–35, 137, 199, 202
 fuel 217
 Fulcher of Chartres 311
 furniture 17, 161–64
 furnum, (furnace, oven) 133, 188, 189
 Fustat 20, 158, 225, 228, 229, 232
 Ga'aton Stream 203
 gables 42, 57, 103
 Galilee 36, 41, 136, 217
 Galilee, Sea of 22
 galleries 75, 108
 Galterius Seagius 336
 games 146 n. 99
 Ganor Compound 309
 garbage disposal 225
 gardens 15, 27, 77, 201–2, 208, 215, 232
 garden houses 23
 garderobes 100, 300, 305, 342
 gargoyle 180
 garlic 135
 garrison 158
 gates 23, 24, 66, 96, 97, 108, 110, 111, 177, 259, 267, 342, 345
 Gautier d'Avesnes 295
 Gaza 41 n. 13
 gecko 136
 geese 139 n. 71
 Geniza, Cairo 23, 127, 141, 161, 162, 171, 221, 223, 226, 228, 231
 Genoa/Genoese 13, 67, 68, 70, 79, 80, 82, 83, 88, 191, 223, 224, 226, 227, 228, 232, 262, 292
 Genoese fleet 41 n. 12, 290
 Germanicus (Germain) 189
 Germany/Germans 13, 16, 97, 158, 207, 330
 German Templers 246
 Getzov, Nimrod 112
 Giblest 275
 Gilboa Mountains 35
 Gilo 341
 ginger 133, 135
 Giovanni Renier 76
 Gith 344–45
 glass 3, 4, 5 n. 16, 43–45, 45 n. 23, 131, 145, 146, 156, 225
 glass blowers/makers 45, 155, 156 n. 16
 glaze/glazing 143, 195
 goats 139 n. 71
 goblets 146
 Godfrey le Tour 354
 Godfrey of Bouillon 72, 322, 329
 Goitein, Shelomo Dov 21, 23, 225, 226, 228, 230 n. 29
 Golan Heights 36
 gold foil 225, 226
 goldsmiths 149, 152
 Gothic 33, 34, 58, 65, 75, 76, 112, 131, 245, 319

- grain/grain stores 124, 133, 142
 granite 36
 grapes 133, 140, 338
 gravel 211
 Greek Orthodox 73, 207, 284
 grilles 284, 329
 grinding stones 154
 groin vaults 31, 55–56, 74, 76, 78, 86,
 101, 107, 108, 109, 110, 113, 115, 131,
 191, 211, 212, 250, 252, 254 n. 27,
 263, 265, 267, 273, 275, 278, 279, 282,
 284, 287, 288, 290, 317, 329, 337, 358,
 360
 grotesque figures 319
 Grunebaum, G.E. von 24
 guardhouse/guardroom 76, 117, 284
 Guérin, Victor 101
 guesthouse 117
 Guibertus Papasius 323
 Guilielmo de Bulgaro 80, 253
 gum 135
 Guy, lord of Jaffa 141
 gypsum 20, 28

 Hadessa 324
 Hadrian IV, Pope 81
 Haifa 107, 111, 262, 306
 Hākim, al-, Fatimid caliph 89
 halls 8, 14, 15, 17, 19, 21, 74, 75, 78,
 100, 101, 103, 105, 107, 108, 112,
 115–18, 124, 131, 155, 191, 196, 244,
 254, 258, 259, 263, 267, 275, 282, 284,
 286, 305, 308, 328, 329, 341, 353, 354,
 355, 356, 359
 hall house 14, 17, 95, 96, 97, 100–7,
 108, 110, 116 n. 5, 117, 159, 193, 196,
 258, 259, 322, 341, 344, 350, 351
 n. 168, 354
hammam 187
 hammer 64
 hand mills 158
 Haramiya, al- 91, 92, 154, 212, 257,
 321
 Har Hozevim 35, 42, 48, 51, 57, 95,
 101 n. 76, 102, 102 n. 81, 124 n. 1,
 137, 139 n. 71, 146, 154, 159, 162,
 163, 193, 196, 247, 259, 345–49, 354,
 358
 Harim 26
 Harper, H. 334
 Hay 142
 hearth 17, 18 n. 17, 19
 heating 17, 19, 28
 Hebron 31, 35, 157, 183 n. 1

 Hellenistic Period 172, 184
 henna 135
 Henri d'Angeli 140
 Henry of Champagne, Count 61
 heraldry 67
 herbs 133, 13
 Herodian Period 73
 herringbone pattern 109, 275, 296,
 338, 347
 Herzliya 70
 Histoire Universalle 172
 Hodoiporikon 218
 hoes 64
 Holy Land 136, 28
 honey 136
 hood mould 58, 76, 319, 320
 hooks 64
 horn 147
 horn bowls 145
 horses 128 n. 21, 13 n. 71, 180, 195,
 196, 225, 343
 hospices 90
 hospitals 90, 178
 Hospitallers 109, 123, 138, 142, 207,
 208, 290, 292, 341, 354, 355; Brother
 of the Kitchen 142; exchange 313;
 Grand Commander 82, 142; Petty
 Commander of the Vault 142;
 Rule 141, 142, 171, 186, 187, 202
 n. 12; seal of 172 n. 40
 Hugh I 82
 Hugh IV 75
 Hugh, Count of Jaffa 141
 Hugo de Calderaria 152
 Humbertus de Paci 328
 Hungary 13
 hygiene 128, 177, 185
 hypocaust 188

 IAA 9, 212, 263, 293, 306
 Ibelins 66, 68
 Ibelin palace, Beirut 161
 Ibn 'Abdun 28 n. 53
 Ibn al-Furāt 141
 Ibn Jubayr 174, 184, 187, 215, 217
 Idrisi, al- 136, 146, 187, 203, 215
 illumination 58, 171–74
 imbreces 42
 incense 135
 industries 88, 123, 152–57, 216, 241
 infirmary 116, 117, 141, 142, 178, 230,
 338
 installations 349
 insulation 4, 31

- intrados 86
 Iran 27, 29
 Iraq 19, 27, 29
 iron 5 n. 16, 125, 152; iron cooking pots 152; iron gate 284; iron grilles 284; iron pegs 284
 irrigation 38
 Israel Department of Antiquities 328, 345
 Istakhri 20
 Italy/Italians; 13, 15, 16, 58, 70, 79, 88, 144, 152, 158, 162, 166 n. 20, 191, 208, 232, 235, 239, 246, 250, 254, 254 n. 27; communes 208
 Iveta 113
 ivory 28
 iwans 20, 23, 71, 273 n. 14

 Jacoby, David 195 n. 6, 218
 Jacques de Vitry 61, 141
 Jaffa 9, 41 n. 12–13, 58, 70, 83, 128 n. 19, 141, 142 n. 86, 159, 261, 262, 290, 292, 309–11, 356; harbour 309
 jamalon vault 341
 jars 193
 Jazīra Isle 229
 Jean Thénaud 323
 Jericho 109, 338
 Jerusalem 6, 7, 8, 9, 13, 21, 26, 42, 47, 51, 69, 70, 71, 71 n. 3, 72, 74, 81, 84, 85, 87, 89, 99, 100, 110, 113, 115, 127, 129, 135, 136, 137, 139, 149, 152, 154, 156, 162, 174, 17, 261, 178, 180, 183, 186, 187, 188, 191, 193, 195, 199, 202, 207, 209, 211, 215 n. 2, 217, 29, 230, 249, 251, 256, 261, 293, 309, 311, 312, 313, 332, 341, 344, 345, 355, 356; Abbey of Notre Dame de Josaphat 323; Armenian Gardens (Jerusalem) 74, 139 n. 71; Armenian Quarter 317; Cardo 196, 209, 249, 314; Cenacle 162 n. 4; citadel 156; Cotton Market 149; David Street 140, 149, 152, 174, 211, 314; David's Gate 158, 207; David's Tower 211; Damascus Gate 321; Gate of Mount Zion 187; Gihon Spring 183; Habad Street 317, 318; Hospital 164, 187; German Quarter/Street 13 n. 1; Jewish Quarter (Juiverie) 13 n. 1 159, 187; Kidron Valley 156; Kingdom of 11, 67, 93, 130, 139, 140, 196, 229, 239, 243, 261, 262, 309; Lions' Gate 187; Malquisinat 127, 211; Mamilla 45 n. 23; Mount of Olives 207; Mount Zion Gate 140; Muristan 178; Patriarch's Bathhouse 183, 187; Patriarch's Pool 183; Patriarch's Quarter 138, 157, 207, 211; Siloam Pool 156, 183; Street of the Armenian Patriarch 316; Street of Bad Cooking/Street of the Cooks (Vicus Coquinatus/Kocatrice) 127, 211; Street of the Bathhouse 211; Street of the Furriers 141, 157, 211; Street of the Gate of the Valley of Jehoshaphat 212; Street of Herbs 135, 157; Street of Judas' Arch 84 n. 47, 84–5, 86, 207, 314, 316; Street of Mount Zion 84, 140, 149, 151, 211, 313; Street of the Spaniards 13 n. 1; Street of the Valley 156; St. Mary of Mount Zion 207; St. Mary in the Valley of Jehoshaphat 186, 187, 207; St. Stephen's Gate 13 n. 1, 81, 188, 207; Tanners' Gate 157; Temple Mount 7; Temple Street (Vicus Templi) 86, 149, 156, 157, 196, 317; Templum Domini (Dome of the Rock) 73, 89, 207; Templum Salomnis (see also al Aqsa Mosque) 207; Tower of David 72, 73, 158; Triple Market 149; Turba of Barka Khān 86, 317; Tyropoeon Valley 13 n. 1; Umayyad palaces 157; Via Dolorosa 180
 Jews 43, 156
 Jew's House 34
 Jewish War 217
 jewellery 152
 Jezre'el Valley 302
 Jiddin 119, 179
 Jifna (Jafenia?) 48, 107, 110, 155, 247, 259, 349
 Joannes Phocas 323, 324
 joggling 58, 68, 102, 243, 246, 274, 274 n. 16
 John of Beirut 186
 John de Brienne, King of Jerusalem 292
 John Gothman 341, 359
 John d'Ibelin 328
 John of Joinville 141, 177 n. 50
 John of Würzburg 73
 Johns, Cedric 7, 117, 119, 131, 193, 306, 308

- Jordan Valley 155
 Joscelin de Courtenay 334, 354
 Joseph of Arimathea 107, 323, 351
 Judea 35, 131, 136
 Judean Mountains 311
 judge 227

 keepsakes 152
 Kabri 184
 Kasteliotissa 75
 Kefedril 322
 Kletter, Raz 345
 Kerak 74
 Kesten, Alex 6, 7, 8, 9, 67, 150, 209,
 250, 265, 267, 270, 271, 275
 keys/keyhole 62, 189
 keystones 173
 Kfar Yasif 336
 khan 358
 Khan al-Sultān 195
 Khawābi' 30
 Khawarizmians 74, 86 n. 50, 312
 kilns 322
 Kirkstall Abbey 189
 Kitchener, Horatio 167, 295
 kitchens 3, 15, 17, 18 n. 17, 19, 23, 24,
 72, 78, 83, 115, 118, 123, 124, 128,
 131, 132, 180, 191, 259, 270
 Knights 5
 knives 127, 146, 147 n. 106
 Kolossi 58, 82, 152, 169, 169 n. 34
 Konstantinos Manasses 218
 Kool, Robert 23 n. 39, 234 n. 41
 Korazim 22
 Kouklia (Covocle) 112
 Kurdana 112, 112 n. 98
 kurkar 35, 54, 78, 88, 287, 289, 296,
 300, 310, 329, 343

 La bataille des vins 140
 labourers 227, 248
 La Citez de Hierusalem 135, 157
 ladders 16, 40, 57, 115, 118, 124, 333
 ladles 127
 La Fève 135
 La Hadia (Kh. Uza) 12, 144 n. 94, 145,
 259, 326, 336–37
 Lake Hula 36
 lamps 171, 172, 298
 lancet windows 101
 lanes 270, 288
 Langley Castle 179 n. 57
 Languedoc 115
 lanterns 172

 Latakia 140
 latrines 2, 3, 18 n. 17, 20, 23, 27, 28,
 72, 76, 83, 108, 117, 118, 119, 120,
 123, 128 n. 25, 133, 177–80, 189, 201,
 251, 258, 305, 327
 Laundering 177
 Lauza al-, Kh. 97, 98, 259, 353, 354
 lavender 135
 lead glaze 126, 172
 Lebanon 26, 41, 127, 141
 legumes 132, 133
 lemons 133
 lentils 132
 lentisk 41
 Leontios Machaeras 75
 Leopold of Austria 292
 lepers 158, 185, 207, 208
 Levant 13
 library 86
 licorice 135
 light 316, 334, 353
 lime kilns 216 n. 7, 322
 limestone 28, 30, 35, 36, 37, 54, 108,
 162, 206, 257, 263, 271 n. 12, 325,
 337, 342, 345, 357
 Lincoln 34
 linseed oil 171
 lintels 36, 58, 67, 84, 84 n. 48, 110,
 273, 274, 282, 288, 314, 314 n. 66,
 320, 337, 339, 349
 lions 79
 lire 223 n. 10, 224, 225, 225 n. 15, 227
 Little Wenham 99
 liturgical objects 152
 livestock 95, 108, 167, 199, 202, 258
 living rooms 24, 115–21
 liwan (see iwan)
 locator (see also dispensator) 99, 101,
 129
 locks 23, 62, 96, 204
 lodgings 89
 lofts 15
 loggia 6, 24, 51–52, 68, 75, 76, 78, 79,
 81, 234, 252, 254
 London 177 n. 50, 178, 226 n. 16
 longaigne 10 n. 58
 loopholes (see also arrow slits) 15, 343,
 353, 358
 Lordemer 219
 Louis IX, King of France 89, 292, 293,
 295
 Louis de Magnac 83
 Ludolf of Suchem 5–6, n. 16, 183 n. 1,
 218, 256, 308, 323

- Lusignans 75, 112, 319
 Lydda (Diospolis) 206, 358

 Macalister, R.A.S. 7
 machicoulis (machicolation) 83, 107,
 110, 334, 341, 345, 349
 machinery 65
 magazines 6
 Magna Mahumaria (al-Bira) 91, 212,
 257, 258, 321, 322, 329–31, 332, 333,
 338
 Maison fortes 97, 359
 majlis 23
 Maldoim 109, 338
 Malik al-Ashraf 263, 289
 Mamluks/Mamluk Period 22, 61, 68,
 78, 195, 239, 246, 254, 263, 274, 290,
 292, 293, 306, 312, 344, 345, 349
 mangers 96
 manor houses/estate centres 40,
 97–112, 118, 133, 152, 154, 166, 175,
 193, 196, 199, 201, 245, 247, 258, 336,
 342, 344
 manorial court 101
 manorial system 97
 mansions 8, 16, 271, 289
 Manueth 145, 353, 354, 356
 manuscripts 42, 65
 maps 208, 254 n. 29
 Marat al-Numan 185
 marble 28, 36, 36 n. 6, 189, 273, 296,
 320
 Margat 141, 159
 marginal dressing 40, 74, 102, 103,
 314 n. 63, 317, 336, 342, 344, 352,
 357
 mariners 227, 228
 markets 123, 135, 136, 158, 208, 232,
 316
 market streets 149, 152, 256
 Marsailles 223, 224
 Marsiglio Zorzi 80, 81, 252, 253, 254,
 256
 mastaba 23, 30, 31
 masonry 287, 299, 316, 317, 325
 masons 28, 29, 47, 64, 127, 226 n. 16,
 227, 248
 masons' marks 8, 40, 62, 84, 86 n. 53,
 102, 109, 177, 189, 196, 243, 246, 250,
 270, 282, 288, 289, 296, 303, 305, 316,
 344
 Mata 359
 mathesep (muhtasib) 134, 217
 matmura (see also sirdāb) 206, 298

 Matthew Paris 75
 mattresses 162, 164, 164 n. 14
 May, Natalie 345
 Mazor, Gabi 345, 349
 meals 1, 130, 132, 138, 139 n. 70, 143
 n. 91, 189
 meat 12, 133, 142, 225
 Medina 25
 Mediterranean 6
 Mei-Neftoah 344
 Meleke 35
 Melisende, Queen of Jerusalem 113,
 135, 158, 209
 melons 134
 merchants 6 n. 16, 70, 71, 80, 81, 87,
 132, 140, 152, 177, 191, 228, 262
 merchants' houses 2, 8, 14, 69, 84–8,
 256, 302
 metal 3
 Mevasseret Zion 351
 mezzanine floor 82
 Michael the Syrian 186
 Mi'ilya 91
 Military Orders 43, 71, 84 n. 47, 89,
 118, 125, 127, 135, 138, 162, 186, 207,
 208, 262
 mills 112, 130, 133, 134, 157–58, 186,
 191, 199, 208
 mill stones 155
 miqwa 206
 Mirabel (Afek, Antipatris) 206
 Mitzpe Ramon 29
 Mizza Ahmar 35
 Mizza Yahudi 35
 moats 216
 Mohammad 25
 molasses 355
 monasteries 2–3, 89–90, 112–14, 118,
 123, 128, 133, 138, 157, 159, 162, 178,
 184, 186, 189, 191, 199, 357
 money changers/money lenders 149
 monopolistic rights 43, 99, 99 n. 74,
 134, 158, 159
 Montailou 34, 115, 118 n. 11, 185
 Montana 341
 Montfort 37, 86 n. 53, 87, 116, 117,
 120, 127 n. 15, 146 n. 102, 153, 179,
 217 n. 9
 Montjoie (Nebi Samwil) 11, 37, 105,
 105 n. 87, 156, 169, 321, 322, 323,
 324, 349, 350, 351, 351 n. 168
 Montmusard 8, 13 n. 2
 Montpellier 41
 mortar 45, 57, 102, 10, 204, 206, 211,

- 227, 258, 263 289, 296, 325, 326,
 338, 339, 341, 342, 343
 mortars 124
 mosaic 22, 43
 mosques 203
 moulding 271, 288, 317, 319
 Mount Carmel 302, 358
 Mount Tabor 302
 Moyses Hall 34
 mudbrick 28, 29, 29 n. 57
 mud mortar 31, 45, 306, 331
 mules 193, 343
 muleteer 226
 Muqaddasi 298
 Muslims 4, 132
 mustard 135
- Nablus 6, 40, 100, 140, 215, 321, 329,
 342
 Nahal Keziv 328
 Nahal Mitnan 29
 Nahal Sofim 349
 Nahariah 203
 nails 36, 64, 204
 Nāsir-e Khosraw 27, 28, 201, 298,
 313
 Nathanya 343
 Nazareth 36 n. 9, 90, 140
 Negev 29
 Negev, Abraham 9, 109, 293, 293
 n. 23, 338
 neighbours 24
 Neolithic Period 19
 New Testament 323
 Nicaea 19
 niches 28, 31, 95, 124, 137, 151, 155,
 172, 193, 212, 298, 326, 327, 348
 Nicosia 11, 52, 58, 65, 66, 70, 71, 75,
 76, 212, 218, 219, 261, 262, 319–20
 night services 119
 night stairs 113
 Nile 23, 230
 Nine-Mans' Morris 131
 noble 5
 Norbury Manor 99
 Nottingham Castle 216 n. 7
 Nuits 97
 nutmeg 135
 nuts 134–35
- oak 41
 Obadiah da Bertinoro 312
 obole 222
 oeil-de-boeuf 121
- offices 26
 ogee 320
 oil 142, 152
 oil presses/mills 93, 107, 108, 118, 154,
 155, 258, 327, 331, 334, 344, 349
 olives 133, 338
 Omerye Mosque 319
 One Thousand and One Nights 57
 onions 133
 Ophel 7, 249, 251
 orange trees 202
 Orbis Terrarum Maps 86
 Ordemer (see also Lordemer) 234
 Order of St. Thomas 208
 Ori, J. 358
 oriel windows 58, 79
 Orient 4, 5
 Orientalization 3, 5, 244
 Ottoman Period 246, 305, 310
 outbuildings 95
 Outremer 223
 ovens (see also furnum, see also
 bakery) 19 n. 22, 22, 28, 29, 43, 95,
 103, 123, 124, 125, 129, 130, 131, 134,
 157, 158–59, 258, 348, 355
 overcrowding 215–16, 239
 ox sheds 196
 Ox Spring 184
- pack animals 195, 196
 packed earth floor 292
Pactum Warmundi 134 n. 37, 208
 paintings 5 n. 16
 Paisley Monastery 189
 palaces 1, 4, 5 n. 16, 16, 52, 57, 58, 68,
 71–81, 83, 115, 191, 202, 208, 211,
 234, 235, 244, 252–54, 254, 263, 264,
 267, 268, 269, 270, 276, 280, 290
 Palermo 228 n. 23
 Palestine 4, 30
 Palestine Exploration Fund (PEF) 321
 Palestinian houses 246, 296
 palm branches 25
 Paolino Veneto 75
 paper 58
 Paphos 319
 Paphos Gate, Nicosia 75
 parade ground 76
 parchment 58
 Paris 185
 partition walls 150, 258, 274
 Parva Mahumaria (al-Qubaiba) 6–7,
 47, 51, 90, 91, 93, 101 n. 76, 127,
 139–40, 152, 153, 154, 158, 159, 193,

- 209, 212, 257, 321, 322, 326, 334, 349, 355, 356
- Pascal II, Pope 302
- passages 123, 124, 244, 250, 265, 267, 271, 272, 275, 288, 339, 340, 341
- passagia* 81 n. 37, 178, 231, 234 n. 40, 235, 238 n. 47, 245
- Patriarch of Jerusalem 134 n. 37, 208
- pavers/paving/pavements 52–55, 251, 227, 289, 303, 333, 345
- paved courts 314, 345
- Pavia 16
- pavilions 77
- pears 133, 134
- peasants 99, 100
- pebbles/pebble floor 289, 296, 310, 347
- pens 95
- pepper 133, 135
- Pergamon 19
- Persian Gulf 20
- Peter II, King of Cyprus 76
- Philip of Novara 138
- Philippe Auguste, King of France 140
- physicians 228
- piano nobile 33
- piazza 317 n. 70
- pick 64
- piers 56, 78, 80, 86, 90, 113, 117, 130, 131, 177, 180, 192, 252, 263, 267, 274, 275, 279, 282, 287, 288, 289, 290, 295, 298, 329, 333 n. 117
- Pietro Vesconte (of Puzzeoli) 75, 79
- pigeons 139 n. 71
- pigs/piggery 138, 139 n. 71, 142, 157, 234
- pilasters 101, 16, 117, 121, 273, 289, 290, 305
- pilgrims 13, 89, 90, 123, 152, 177, 178, 209, 309
- pillars 22, 26, 74, 76
- pillows 162, 164
- pipes 15, 64, 124, 153, 153, 174, 175, 179, 206, 258, 300, 326, 333
- Pisa/Pisans 13, 70, 79, 262
- Pisgat Ze'ev 204
- pit 180, 305
- pithoi 19, 193
- placearius 253
- planned villages/street villages 13, 108
- plaster 22, 45–47, 57, 74, 84 n. 37, 92, 95, 105, 109, 153, 193, 204, 206, 257, 284, 303, 356
- plasterers 47, 226 n. 16
- platforms 95, 150, 150 n. 2, 204, 256, 349
- plots 15, 258, 263, 327, 330, 347
- ploughing 196
- pollen 133
- pollution 215–19
- pomegranates 202
- Pompeii 21
- pools 21, 331
- population 261, 261 n. 2, 273
- Porat, Sefi 9, 293 n. 24
- porcelain 145 n. 95
- porch 1, 15
- pork 128
- postholes 96, 288
- pork 128
- portico 90
- postholes 62
- pottery/potteries 109, 149, 156, 338, 345, 348
- poultry (see also chickens) 142
- Prausnitz, M. 9, 328
- Prawer, Joshua 4, 5, 6, 217, 235, 254, 327
- Premonstratensians 156, 322, 323
- pressed clay floor 305
- Pringle, Denys 6, 9, 87, 88, 90, 111, 116, 120, 121, 144, 249, 293 n. 23, 300, 312, 324, 330, 331, 337, 339, 342, 359, 360
- prison 76, 89
- privacy 17, 24, 26, 187, 200, 242, 297
- privileges 186
- prostitutes 185
- Provence 13, 207, 208
- public buildings 71, 312
- pulpit 132
- putlog holes 16, 47, 339, 348
- Pyrenees 34
- qa'a 21, 23
- qa'a al-bayt 30
- Qalansuwa (Calansue) 101, 101 n. 76
- Qal'at Tantura 259
- Qala'un, Sultan 303
- Qalonie (Motza) 51, 97, 101 n. 76, 103, 175, 259, 356–57
- Qasr el-Hair East 68
- Qayrawān 28 n. 23
- Qazwini al- 184
- Qishle 74
- quadriburgia 100, 179
- quail 133

- quarry/quarrying/quarrymen 28, 37, 108
 quoins 36, 40, 48, 108, 314 n. 63, 342, 352, 357
- Radulfus Aliensis 323
 railing 61
 rain 24, 27, 82, 174, 180, 201, 298, 300
 Ramallah 165, 320, 340, 353
 Ramla 28, 298, 324
 Ramot 349
 Ramot Allon 9, 167, 180
 Ras al-Ain (Sidon) 184
 ratl 25, 225 n. 14
rāwīya 30
 Recordane 112, 12 n. 98
 Red Towers 109, 133, 135, 202 n. 12, 139 n. 71, 338
 recesses 279, 298, 348, 349
 reed huts 42, 257
 refectories 3, 90, 113, 119, 123, 124, 130, 131, 132, 162, 189
 relieving arches 110, 273, 314 n. 66
 reliquaries 152
 Renaissance 76, 309, 319
 rental 231–39
 Rentia (Rantia) 358–59
 reredorter 179
 reservoirs 97, 174, 202, 353
 Rhodes 63 n. 58, 199
 rib vaults 55, 12, 16, 117, 120, 121
 rice 25
 Richard I 290, 292, 319
 Richard of Cornwall 332
 ringworm 185
 River Jordan 133
 roads 215, 305, 344
 robbers 34
 Robertus Coquus 128 n. 19
 Robinson, Edward 331
 Rochechouart 323
 rock breakers 26
 Rockefeller Museum 306
 Rolandus Antelmus 336
 Roman Period/Rome/Romans 241–42, 15, 42, 206, 217, 305, 356
 Roman roads 212, 332, 341, 345, 349
 Romanesque 33, 65, 89, 245
 roofs 15, 17, 19, 21, 23, 24, 28, 34, 42–3, 42 n. 18, 55, 57, 64, 82, 105, 112, 117, 124, 130, 174, 180, 251, 257, 258, 265, 289, 292, 300, 305, 308, 313, 324, 333, 347, 348, 350, 352
 roof tiles 258
- rope makers 149, 226
 rosettes 319
 Rotunda 72, 73
 rose windows 131
 Rothelin Continuation 74
 rubble construction 306, 331, 338, 357
 rue 133
 ruga 212
 Ruga Cooperta 234, 239, 253
 Ruga de Tribus Meagiis 234
 rugs 242
 Rushmia (Rushmiya, Kh.) 107, 358
 rye 133
- sacristy 163
 Safed 31, 149 n. 95
 saffron 129 n. 26
 Sāfitā 12
 Safran 140
 sage 133
 sala (living room) 117
 Saladin 141 n. 86, 262, 290, 292, 328, 330, 354
 salamanders 136
 Salamis 319
 saltwort 155
 Salutio 114 n. 104, 359
 Samaria (Sebaste) 35, 136, 206, 217
 Samarra 26
 San Gimignano 16
 sand 45, 52, 289
 sandstone 35, 78, 263, 271 n. 12, 274, 296
 Sanhedria 349
 Saphorie 140
 Saranda Kolones 152, 179
 Sārūj 20
 scaffolding 42, 47, 56
 Schick, Conrad 211
 school masters 228
 screw press 155
 scriptoria 172
 Sea of Galilee 133
 Seacourt, Oxfordshire 17
 seats 21, 17, 180
 security 92
 seeds 135
 Selim II 355
 septic pits 189
 serfs 99
 service rooms 17
 sesame 133, 135
 sesame oil 171 n. 35
 servants 227

- settling tank 64
 sewage 20, 21, 27, 17 n. 50, 179, 189, 208
 sewage shaft 287
 sewer men 28 n. 53
 Sha'afat 169, 170
 shaft 300
 Shari, Horvat 203, 206
 Sharon 133
 sheep 139 n. 71, 185
 shelf 22
 shellfish 137, 141
 shields 86
 shingle roof 34
 shoemakers 226
 shops 2, 6, 14, 15, 51, 52, 77, 80, 81, 84, 86, 88, 149–52, 156, 174, 186, 209, 232, 236, 237, 238, 239, 241, 242, 249, 251, 252, 253, 256, 270, 284, 302, 313, 315, 316, 317
 shopkeepers 149, 228
 shutters 42, 58, 61
 Sicily 228 n. 23
 Sidon 86, 120, 131, 140, 163, 184, 271 n. 12
 siege machines 40
 Siege of Nicosia, 1571 76
 Silifke 228 n. 23, 229
 silk 5 n. 16
 sills 319
 silos 13, 192
 silversmiths 152
 Simone Malocello 80, 253
 Siraf 20
 sirdāb (see als matmura) 24, 26–27, 192, 191, 298
 Sivenete 203
 slats 19
 slaughterhouse 218
 slaves 248
 sleeping 2, 17, 186
 sleeping bag 164
 slipper lamps 172
 smiths/smithies 149, 152
 smoke 28, 95
 snow 141
 soap factory/soap makers 8, 149, 155, 155 n. 16, 290
 sockets 86, 273
 soffit 300
 solar 6, 100, 115–18
 soldiers 177
 Solemaria, 43 n. 20, 111, 146, 156
 solier 115
 soot 169, 274
 sous 223, 223 n. 10, 224
 Southwark, London 185
 spade 64
 Spain 13, 16, 25, 195
 spices 129, 129 n. 26, 133, 135
 spinners 225, 226
 spolia 36, 269, 297 n. 27
 spoons 128, 146, 147, 147 n. 107
 spouts 180, 182
 springs 113, 183, 184, 185, 331
 springers 86, 358
 stables 23, 76, 95, 108, 195–96, 216, 242
 staircase 15, 19, 22, 23, 29, 57–8, 78, 82, 83, 88, 101, 102, 103, 105, 107, 108, 110, 111, 113, 114, 115, 117, 118, 120, 131, 251, 253 n. 16, 258, 270, 271, 275, 279, 324, 288, 297, 298, 300, 326, 329, 333, 337, 338, 339, 341, 343, 344, 348, 355, 360
 stalls 209, 238, 279
 starch 135
 Stenton, Doris 16
 steps 289, 298, 329
 Stern, Edna 355
 Stern Eliezer 36
 Stews, the 126, 128
 storax 41
 stone/stones 4, 5, 5 n. 16, 22, 34, 35, 180, 191, 193, 204, 209, 211, 245, 251, 253, 263, 298, 305, 308, 310, 317, 326, 331, 337, 339, 344, 345, 350, 352, 355, 357, 358
 stone chips 325
 stone ring 343
 storage/storerooms/store-houses 2, 15, 16, 19, 23, 24, 27, 28, 74, 80, 81, 82, 88, 93, 108, 114, 151, 191–95, 201, 204, 234, 236, 254, 254 n. 27, 258, 270, 284, 295, 298, 302, 348, 353, 354
 storm-water 326
 storm-water channels 175, 258
 St. Catherine Monastery 216
 St. Euthymios Monastery 45, 131, 162
 St. John in the Woods 113
 St. Jorge de la Baene 334, 335, 336
 St. Sophia Cathedral, Nicosia 52
 Stradetta (Spoleto) 150 n. 2
 streets 5 n. 16, 6, 8, 14, 26, 27, 51, 91, 115, 150, 208–9, 257, 289, 295, 316, 324, 325, 326, 330, 332
 street cleaner 27
 street villages 51m 69, 91, 92, 94, 153, 202, 245, 257–58

- string course 319, 320
 subterranean passage 284
 sugar 133, 135, 136, 155, 354
 sugar mill 108, 152, 155, 353, 354, 355, 356
 sump shaft 27, 64, 174, 299
 Survey of the Land of Judah 321
 Survey of Western Palestine (SWP)
 101, 105, 111, 167, 295, 321, 342, 350,
 351 n. 168, 356
 Syria 4, 12, 25, 144, 146, 224, 228, 229
 Syrians (Eastern Christians) 207
 Syro-Frankish beakers 44, 146
- tables 17, 28, 52, 79, 103, 128, 131,
 132, 161, 162, 163, 238, 239
 tabuns 22, 28, 95, 103, 159, 204, 246,
 305, 311, 349
 tacks 64
 tailors 149
 tanners/tanning 157, 183, 216
 taverns 140, 141, 142
 tavern owners 149
 taxes 99, 108, 132, 133, 135, 144, 171
 n. 35, 193, 195 n. 6, 245
 teak 28
 tegulae 42, 43
 Tel Aviv 9, 344
 Tel Da'uk 112
 Templars, 7, 43 n. 20, 57, 58, 72, 78,
 84 n. 47, 111, 116, 119, 138, 186,
 208, 303, 306; Commander of
 Victuals 144; insignia 84 n. 47;
 Master 128; Rule 125. 142, 143
 n. 91, 145, 146, 164, 186; stables 138
 n. 67; trial 163; tunnel 36, 212
 Templar of Tyre 31, 78, 201
 terebinth 41
 terraces 31, 202, 327, 333
 tether holes 298
 Teutonic Order 44, 74, 75, 87, 116,
 208, 229; Rule 143 n. 91, 164, 328,
 334, 354
 textiles 156
 Thebes 19, 19 n. 23
 Theoderich 57, 73, 115, 186, 209, 313
 Theodoros Sophrianos 128
 thieves 17
 Third Crusade 89, 177, 262, 290, 292,
 302, 319
 Thomas à Becket, St. 13 n. 2
 threshold stones 96, 103, 204, 287, 289,
 306, 308, 314, 325, 326, 337, 347
 Thuringia 166 n. 20
- Tiberias 22, 136, 187
 tie holes 196, 197
 Tignor Holmes, Urban 4, 6
 tiles 4, 28, 42, 43, 57, 13, 227, 258, 348
 tilers 226 n. 16
 timber (see also wood) 30, 31, 35,
 40–42, 41 n. 14–15, 112
 tofts 91, 202
 tombstones 64
 tools 41 n. 12, 64, 152, 193
 tooling 317
 Toron des Chevaliers (Latrun) 119, 332
 Tortosa 71
 towers 5 n. 16, 16, 40, 73, 79, 81 n. 37,
 82–3, 88, 100, 101, 102, 107, 108, 110,
 112, 113, 119, 138, 179, 201, 208, 211,
 234, 254, 255, 305, 33, 343, 344, 351,
 353, 355, 356
 tower houses 14, 16, 245
 tracery 121, 131
 trade 242, 262, 309
 transept 77
 transportation 195 n. 6
 transverse arch 19, 23, 55, 56, 113,
 267, 278, 282, 289, 22, 295, 300, 305,
 317
 travellers 123
 treadmill 65
 Tripoli 155, 230; County of 11, 114
 n. 104
 Troodos Mountains 41
 troughs 125, 196
 trowels 45, 64, 296, 343, 347
 trumpets 186
 Tulinids 20, 23
 Tunisia 225, 228 n. 23
 Turcoples 251
 turkeys 133
 turrets 108, 110, 111, 179, 337, 342,
 358
Turris Anglorum 13 n. 2
 Tuscany 52
 tympanum 320
 Tyre 70, 71, 72, 79, 80, 89, 134 n. 37,
 146, 152, 156, 159, 174, 178, 184, 185,
 186, 191, 208, 218, 229, 230, 231, 232,
 235, 247, 251, 262, 309
- Umayyad Period 26, 68, 92
 Umm Dabaghiyah 19 n. 22
 Umm Khalid (Castellare Rogerii
 Longobardi) 111
 undercrofts 15, 93, 100, 192, 193, 258,
 324, 324 n. 90, 325, 333, 341

- underground streets 212
 Uppsala Map of Jerusalem 72, 140
 Urniet 322, 340
 Usāmah Ibn Munqidh 128, 135, 140, 163, 185
 Uza (see La Hadia)

 Vadum Jacob 37, 139 n. 71, 146, 147 n. 106, 159
 Valley of Elah 359
 Valuables 27
 vats 153, 333
 vaulting (see also by type) 47, 55–7, 97, 103
 vegetables 143, 199, 202, 338
 Vendee 166
 Venice/Venetians 13, 36, 42, 52, 70, 76, 79, 80, 88, 134 n. 37, 159, 187, 192, 208, 223, 232, 245, 262, 319, 339
 ventilation 17, 26, 58, 84, 121, 124, 165, 196
 vestibule 18
 villa nova 330, 338
 villages 17, 91
 vineyards 323
 Viscount 217
 volutes 319
 voussoirs 271 n. 12, 36, 84, 110, 246, 274, 303, 313, 314, 316, 340, 341, 349
 Vulgaria 305

 Wadi al-Qurayn 353
 Wadi Siyah 179
 wages 224–27
 walls 5 n. 16, 20, 21, 2, 24, 28, 29, 31, 34, 47, 48–51, 82, 88, 92, 93, 96, 101, 110, 111, 114, 15, 117, 119, 124, 180, 193, 196, 199, 204, 216, 251, 257, 258, 265, 274, 278, 287, 288, 293, 298, 300, 305, 306, 310, 320, 325, 326, 327, 331, 338, 339, 340, 341, 344, 345, 347, 349, 350, 351, 352, 353, 355, 356, 357, 358
 wall covering 83, 284
 Warren, Charles 178
 washing 187, 188, 299
 waste disposal 275
 water/water supply 2, 15, 19, 20, 21, 23, 64, 113, 15, 174–77, 183–84, 188, 189, 193, 208, 218, 295, 298, 299, 303, 338

 Water carrier 227
 wattle and daub 4, 34
 wax 136, 171
 weapons 152
 weather 200
 wells 19, 20, 23, 27, 174, 184, 202
 wheat 133, 142
 Wharran Percy, Yorkshire 17
 whitewash 28
 Wilbrand of Oldenburg 5 n. 16, 66, 68, 71 n. 6, 75, 140, 161
 William Horman 305
 William of Petra 254
 William of St. Pathus 89
 William of Tyre 41 n. 12, 42, 74, 113, 201, 257, 299
 William de Villaret 16
 wills 162
 windmills 158
 windows 4, 5 n. 16, 16, 20, 24, 31, 40, 42, 45, 47, 58–61, 71 n. 6, 78, 79, 86, 87, 88, 92, 95, 101, 102, 103, 105, 108, 112, 113, 115, 119, 121, 131, 132, 209, 243, 246, 258, 263, 267, 270, 271, 273, 274, 278, 282, 284, 287, 288, 292, 297, 300, 317, 319, 329, 333, 334, 337, 339, 340, 347, 350, 353
 window frames 314 n. 63, 325
 wine 74, 99 n. 74, 118, 133, 139, 140, 141, 152, 191, 225, 258
 wine presses 93, 118, 152–54, 258, 327, 334
 women 24, 200
 wood 273, 289, 316, 333, 339, 348
 wood bowls 145
 wood door 193, 204
 wood house 42, 254
 wood shutters 150 n. 2
 wool carder 226
 woolmungers 225
 work benches 150 n. 2, 348
 workshops 23, 149–52, 151, 152, 174, 236
 work space 95, 149–59, 204

 Yabrud 165
 Yoqne'am (see Caymont)

 znad 127
 Zionist villages 246